

## Storm Data and Unusual Weather Phenomena

Time Interval	Path Interval	Path Width	Number of Paths	Estimated Error
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Location	Date	Local Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	Character of Storm
<b>ALABAMA, Central</b>									
<b>Pike County</b>									
Countywide	02	1755CST 1855CST			0	0	8K	0	Flash Flood
Slow moving thunderstorms dropped several inches of rain across Pike County in a short period of time. Major street flooding was reported in the city of Troy around 7 pm and continued across the area for the next hour or so.									
<b>ALZ046-048&gt;050</b>									
<b>Bullock - Russell - Pike - Barbour</b>									
	07	0015CST 0600CST			0	0	4K		Strong Wind
Remnants of Hurricane Frances moved northward mainly along the Alabama and Georgia state line. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.									
<b>ALZ021-036-045-047</b>									
<b>Cleburne - Coosa - Macon - Lee</b>									
	07	0015CST 0600CST			0	0	4K		Strong Wind
Remnants of Hurricane Frances moved northward mainly across the eastern counties of Central Alabama. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.									
<b>ALZ020</b>									
<b>Cherokee</b>									
	07	0015CST 0600CST			0	0	1K		Strong Wind
Remnants of Hurricane Frances moved northward near the Alabama and Georgia state line. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.									
<b>ALZ028&gt;029-037&gt;038</b>									
<b>Clay - Randolph - Tallapoosa - Chambers</b>									
	07	0015CST 0600CST			0	0	6K		Strong Wind
Remnants of Hurricane Frances moved northward near the Alabama and Georgia state line. Strong winds of 30 to 40 mph along with saturated ground conditions allowed several trees and power lines to be blown down.									
<b>ALZ043</b>									
<b>Elmore</b>									
	07	0500CST			0	1	11K		Strong Wind
A few trees were downed from the Remnants of Frances. One tree fell on a vehicle injuring the occupant.									
<b>Lamar County</b>									
Millport	12	1805CST			0	0	0	0	Hail (0.88)
Nickel size hail was reported in the city of Millport.									
<b>Jefferson County</b>									
Birmingham Arpt	16	0000CST 2359CST			0	0			Heavy Rain
The daily rainfall associated with the tropical system Ivan was 9.75 inches. This broke the previous daily rainfall record at the Birmingham International Airport of 8.84 inches which was established in 1916.									
<b>Montgomery County</b>									
(Mgm)Montgomery Arpt	16	0000CST 2359CST			0	0			Heavy Rain
The daily rainfall associated with the tropical system Ivan was 5.07 inches. This broke the previous daily rainfall record at Dannelly Field of 2.18 inches which was established in 1971.									
<b>Pike County</b>									
1 E Troy	16	0125CST	0.1	30	0	0	2K		Tornado (F0)
A brief weak tornado was reported just east of Troy. Several trees were blown down over a short distance. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate brief touchdown location 31.80N/85.97W.									
<b>Barbour County</b>									
2 S Clio	16	0156CST	0.2	40	0	0	2K		Tornado (F0)
A brief weak tornado was reported across the extreme southwest portion of Barbour County. Several trees were knocked down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate brief touchdown location 31.71N/85.68W.									

## Storm Data and Unusual Weather Phenomena

Time Interval	Path Interval	Path Width	Number of Birds	Estimated Density
0600-0700	0600-0700	0.5-1.0	10	0.01
0700-0800	0700-0800	0.5-1.0	15	0.01
0800-0900	0800-0900	0.5-1.0	20	0.01
0900-1000	0900-1000	0.5-1.0	25	0.01
1000-1100	1000-1100	0.5-1.0	30	0.01
1100-1200	1100-1200	0.5-1.0	35	0.01
1200-1300	1200-1300	0.5-1.0	40	0.01
1300-1400	1300-1400	0.5-1.0	45	0.01
1400-1500	1400-1500	0.5-1.0	50	0.01
1500-1600	1500-1600	0.5-1.0	55	0.01
1600-1700	1600-1700	0.5-1.0	60	0.01
1700-1800	1700-1800	0.5-1.0	65	0.01
1800-1900	1800-1900	0.5-1.0	70	0.01
1900-2000	1900-2000	0.5-1.0	75	0.01
2000-2100	2000-2100	0.5-1.0	80	0.01
2100-2200	2100-2200	0.5-1.0	85	0.01
2200-2300	2200-2300	0.5-1.0	90	0.01
2300-2400	2300-2400	0.5-1.0	95	0.01
2400-2500	2400-2500	0.5-1.0	100	0.01
2500-2600	2500-2600	0.5-1.0	105	0.01
2600-2700	2600-2700	0.5-1.0	110	0.01
2700-2800	2700-2800	0.5-1.0	115	0.01
2800-2900	2800-2900	0.5-1.0	120	0.01
2900-3000	2900-3000	0.5-1.0	125	0.01
3000-3100	3000-3100	0.5-1.0	130	0.01
3100-3200	3100-3200	0.5-1.0	135	0.01
3200-3300	3200-3300	0.5-1.0	140	0.01
3300-3400	3300-3400	0.5-1.0	145	0.01
3400-3500	3400-3500	0.5-1.0	150	0.01
3500-3600	3500-3600	0.5-1.0	155	0.01
3600-3700	3600-3700	0.5-1.0	160	0.01
3700-3800	3700-3800	0.5-1.0	165	0.01
3800-3900	3800-3900	0.5-1.0	170	0.01
3900-4000	3900-4000	0.5-1.0	175	0.01
4000-4100	4000-4100	0.5-1.0	180	0.01
4100-4200	4100-4200	0.5-1.0	185	0.01
4200-4300	4200-4300	0.5-1.0	190	0.01
4300-4400	4300-4400	0.5-1.0	195	0.01
4400-4500	4400-4500	0.5-1.0	200	0.01
4500-4600	4500-4600	0.5-1.0	205	0.01
4600-4700	4600-4700	0.5-1.0	210	0.01
4700-4800	4700-4800	0.5-1.0	215	0.01
4800-4900	4800-4900	0.5-1.0	220	0.01
4900-5000	4900-5000	0.5-1.0	225	0.01
5000-5100	5000-5100	0.5-1.0	230	0.01
5100-5200	5100-5200	0.5-1.0	235	0.01
5200-5300	5200-5300	0.5-1.0	240	0.01
5300-5400	5300-5400	0.5-1.0	245	0.01
5400-5500	5400-5500	0.5-1.0	250	0.01
5500-5600	5500-5600	0.5-1.0	255	0.01
5600-5700	5600-5700	0.5-1.0	260	0.01
5700-5800	5700-5800	0.5-1.0	265	0.01
5800-5900	5800-5900	0.5-1.0	270	0.01
5900-6000	5900-6000	0.5-1.0	275	0.01
6000-6100	6000-6100	0.5-1.0	280	0.01
6100-6200	6100-6200	0.5-1.0	285	0.01
6200-6300	6200-6300	0.5-1.0	290	0.01
6300-6400	6300-6400	0.5-1.0	295	0.01
6400-6500	6400-6500	0.		

Location	Date	Standard	Local (Miles)	Wind (Yards)	Killed	Injured	Property Damage	Crops	Character of Storm
<b>ALABAMA, Central</b>									
<b>ALZ050</b>	<b>Barbour</b>								
	16	0400CST 1300CST			0	0	500K		High Wind (G60)
<b>Barbour County</b>									
<b>Countywide</b>	16	1005CST 1200CST			0	0	3K		Flash Flood
A few hundred trees and power lines were knocked down or blown over countywide. At least 200 residences received varying degrees of roof damage. Several homes were without power three to four days. Maximum wind gusts were estimated around 70 miles an hour within one of Ivan's outer-rainbands. Doppler radar estimated 3 to 5 inches of rain across the county associated with Ivan. A few roads were covered with water in the southwest part of the county and were temporarily impassable.									
<b>ALZ046</b>	<b>Bullock</b>								
	16	0400CST 1300CST			0	0	2.4M		High Wind (G70)
<b>Bullock County</b>									
<b>Countywide</b>	16	1005CST 1245CST			0	0	2K		Flash Flood
Thousands of trees and power lines were snapped off or blown down across the county. Hundreds of homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 80 miles an hour within one of Ivan's outer rainbands. Doppler radar estimated 3 to 5 inches of rain associated with Ivan and a few roads were flooded in western Bullock County.									
<b>ALZ042</b>	<b>Lowndes</b>								
	16	0400CST 1300CST			0	0	3.5M	200K	High Wind (G77)
Thousands of trees and power lines were snapped off or blown down countywide. Utilities were not all restored for at least a week. Several dozen homes sustained varying degrees of wind damage. Debris removal took over a month in spots. Maximum wind gusts were estimated around 90 miles an hour.									
<b>ALZ044</b>	<b>Montgomery</b>								
	16	0400CST 1300CST			0	0	9M	50K	High Wind (G65)
Hundreds of trees and power lines were snapped off or blown down during Ivan. At least 3300 homes sustained varying degrees of wind damage. Power was not fully restored for at least a week. Maximum wind gusts were estimated around 75 miles an hour. Three women in Montgomery were killed due to carbon monoxide poisoning after Ivan. The women had a generator running in their home because the power was out of service.									
<b>ALZ049</b>	<b>Pike</b>								
	16	0400CST 1300CST			0	0	3M	0	High Wind (G65)
Hundreds of trees and power lines were snapped off or blown down across the entire county. Power remained out of service for around one week in places. At least 400 homes suffered some type of wind damage. Maximum wind gusts were estimated around 75 miles an hour.									
<b>ALZ048</b>	<b>Russell</b>								
	16	0400CST 1300CST			0	0	275K	0	High Wind (G56)
<b>Russell County</b>									
<b>Countywide</b>	16	1005CST 1300CST			0	0	25K	0	Flash Flood
Hundreds of trees and power lines were blown down across the county. Power was not fully restored in some locations for 4 days. At least 100 homes suffered some form of wind damage, mainly roof damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate up to 4 inches of rain fell in a short period of time. This produced temporary flooding of some roadways. One road sustained major damage as it was washed out.									
<b>Barbour County</b>									
<b>8 E Clayton</b>	16	0405CST	0.1	40	0	0	2K	0	Tornado (F0)
A brief weak tornado was reported east of Clayton. Several trees were knocked down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate location 31.91N/85.30W.									
<b>Macon County</b>									
<b>9 SE Tuskegee</b>	16	0500CST	0.1	25	0	0	2K	0	Tornado (F0)
A brief weak tornado was reported near Tuskegee. Several trees were blown down. This weak tornado was associated with an outer rain band of the tropical system Ivan. Approximate location 32.32N/85.52W.									

## Storm Data and Unusual Weather Phenomena

		Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons  Killed    Injured		Estimated Damage  Property   Crops		Character of Storm	September 2004
Location	Date									

## ALABAMA, Central

## Autauga

0 0 2.6M 100K High Wind (G71)

16      0915CST  
1245CST

0	0	8K	Flash Flood
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**ALZ040**

## Dallas

0 0 10M 200K High Wind (G80)

16 0956CST  
1230CST

0	0	7K	Flash Flood
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ALZ043

Elmore

0 0 2M 50K High Wind (G62)

16 0915CST  
1245CST

0 0 5K Flash Flood

ALZ047

Lee

0 0 1M High Wind (G60)

ALZ045

## Macon

0 0 400K 35K High Wind (G60)

16      1005CST  
1300CST

0	0	6K	Flash Flood
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ALZ039

## Marengo

0 0 10M 250K High Wind (G80)

Thousands of trees and power lines were blown down or snapped off during Ivan. Several hundred homes or structures received varying degrees of wind damage. Numerous roadways were blocked from fallen trees making them temporarily impassable. Power was not fully restored for at least a week in spots. Maximum wind gusts were estimated around 90 miles an hour.

## Storm Data and Unusual Weather Phenomena

Time Loss/ Length	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b>ALABAMA, Central</b>									
<b>ALZ030</b>	<b>Sumter</b>								
	<b>16</b>	<b>0530CST</b>			<b>0</b>	<b>0</b>	<b>3.6M</b>	<b>80K</b>	<b>High Wind (G73)</b>
		<b>1300CST</b>							
	Thousands of trees and power lines were blown down with the most significant damage in the southern part of the county. At least 5500 customers were without power for up to two weeks. Several hundred homes and structures received varying degrees of wind damage. Maximum wind gusts were estimated around 85 miles an hour. One man was killed by an allergic reaction to bee stings. He was unable to phone emergency personnel because the power was out.								
<b>ALZ031</b>	<b>Greene</b>								
	<b>16</b>	<b>0600CST</b>			<b>0</b>	<b>0</b>	<b>5M</b>	<b>75K</b>	<b>High Wind (G77)</b>
		<b>1400CST</b>							
	Thousands of trees and power lines were blown down countywide. At least 3300 customers were without power at the height of the storm. Some locations did not get power back for a week. Twenty five to fifty homes suffered significant damage and many more sustained minor roof damage. Maximum wind gusts were estimated around 90 miles an hour.								
<b>ALZ032</b>	<b>Hale</b>								
	<b>16</b>	<b>0600CST</b>			<b>0</b>	<b>0</b>	<b>2M</b>	<b>25K</b>	<b>High Wind (G77)</b>
		<b>1400CST</b>							
	Thousands of trees and power lines were blown down or snapped off during Ivan. Several hundred homes or structures received varying degrees of wind damage. At least 200 trees blocked roadways making them temporarily impassable. Power was not fully restored for at least a week in spots. Maximum wind gusts were estimated around 90 miles an hour.								
<b>ALZ033</b>	<b>Perry</b>								
	<b>16</b>	<b>0600CST</b>			<b>0</b>	<b>0</b>	<b>3.5M</b>	<b>200K</b>	<b>High Wind (G78)</b>
	Thousands of trees and power lines were snapped off or blown down. At least 1100 customers were without power. Power was not completely restored in some spots for two weeks. Several hundred homes and mobile homes were damaged. Many county roads were blocked and impassable due to fallen trees. Maximum wind gusts were estimated around 90 miles an hour.								
<b>ALZ034</b>	<b>Bibb</b>								
	<b>16</b>	<b>0700CST</b>			<b>0</b>	<b>0</b>	<b>350K</b>		<b>High Wind (G56)</b>
		<b>1400CST</b>							
<b>Bibb County</b>									
<b>Countywide</b>	<b>16</b>	<b>0956CST</b>			<b>0</b>	<b>0</b>	<b>2K</b>		<b>Flash Flood</b>
		<b>1245CST</b>							
	At least one hundred trees and power lines were blown down across Bibb County during Hurricane Ivan. At least 150 households were impacted with varying degrees of wind damage. Three homes suffered extensive damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar estimated 5 to 7 inches of rain during Ivan which caused a few roads in southern Bibb County to become temporarily impassable.								
<b>ALZ038</b>	<b>Chambers</b>								
	<b>16</b>	<b>0700CST</b>			<b>0</b>	<b>0</b>	<b>340K</b>		<b>High Wind (G52)</b>
		<b>1400CST</b>							
<b>Chambers County</b>									
<b>Countywide</b>	<b>16</b>	<b>1020CST</b>			<b>0</b>	<b>0</b>	<b>3K</b>		<b>Flash Flood</b>
		<b>1630CST</b>							
	Numerous trees and power lines were blown down across the county. Maximum wind gusts were estimated around 60 miles an hour within one of Ivan's outer rainbands. At least 8000 customers were without power during the storm. J.P. Powell Middle School had part of its roof blown off.Doppler radar and ground observations indicate 3 to 5 inches of rain fell in association with Ivan. A few roadways became temporarily impassable due to high water.								
<b>ALZ035</b>	<b>Chilton</b>								
	<b>16</b>	<b>0700CST</b>			<b>0</b>	<b>0</b>	<b>700K</b>	<b>75K</b>	<b>High Wind (G61)</b>
		<b>1400CST</b>							
<b>Chilton County</b>									
<b>Countywide</b>	<b>16</b>	<b>0956CST</b>			<b>0</b>	<b>0</b>	<b>8K</b>		<b>Flash Flood</b>
		<b>1245CST</b>							
	Thousands of trees were blown down across Chilton County. Five structures were heavily damaged and around another 150 suffered minor roof damage. At least 100 agricultural businesses sustained damage. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar and ground observations indicate 6 to 9 inches of rain fell across the county during Ivan. Several roadways were temporarily impassable due to high water but even more roads were affected by fallen trees.								

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b>ALABAMA, Central</b>									
<b>ALZ037 Tallapoosa</b>									
	16	0700CST 1400CST			0	0	450K	25K	High Wind (G60)
Hundreds of trees and power lines were snapped off or blown down across the county. The most significant damage occurred across the southern and eastern sides of the county. Power was not fully restored for at least 3 days. At least 75 homes and structures were damaged to some degree by Ivan. Maximum wind gusts were estimated around 70 miles an hour. In the southern part of the county, a man was seriously cut by a chain saw while clearing debris.									
<b>ALZ036 Coosa</b>									
	16	0700CST 1400CST			0	0	350K	25K	High Wind (G54)
Hundreds of trees and power lines were blown down across the area. At least 1000 customers were without power during the tropical system. The power was not restored in all locations for at least 5 days. Two homes were totally destroyed and at least 12 more homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate as much as 4 to 5 inches of rain fell across parts of Coosa County, but no flooding was reported. A woman, around the age of 40, died when she fell into a well retrieving water. She was at the well because the utilities were out of service.									
<b>ALZ028 Clay</b>									
	16	0730CST 1700CST			0	0	290K		High Wind (G50)
<b>Clay County Countywide</b>									
	16	1045CST 1700CST			0	0	10K		Flash Flood
Hundreds of trees were knocked down countywide due to Ivan. Twenty to thirty homes sustained varying degrees of wind damage. Maximum wind gust were estimated between 55 and 65 miles an hour. Doppler radar and ground observations indicate up to 5 inches of rain fell during the tropical system. At least 20 county roads were temporarily impassable due to high water.									
<b>ALZ024 Jefferson</b>									
	16	0730CST 1500CST			0	0	10M		High Wind (G60)
<b>Jefferson County Countywide</b>									
	16	1045CST 2000CST			0	0	500K		Flash Flood
Hundreds of trees were blown down across all of Jefferson County. The power was not fully restored in all locations for at least 7 days. Over 500 homes sustained varying degrees of wind damage. Maximum wind gusts were estimated around 70 miles an hour. Doppler radar and ground observations indicated 6 to 9 inches of rain fell in association with Ivan. At least 250 homes suffered water damage due to flooding. Many creeks and roadways were flooded and were temporarily impassable.									
<b>ALZ022 Pickens</b>									
	16	0730CST 1400CST			0	0	600K	0	High Wind (G56)
Hundreds of trees and power lines were knocked down in association with Ivan. Power outages lasted as long as 5 days in some locations. Hundreds of homes suffered varying degrees of wind damage. Maximum wind gusts were estimated around 65 miles an hour.									
<b>ALZ029 Randolph</b>									
	16	0730CST 1700CST			0	0	125K	0	High Wind (G56)
<b>Randolph County Countywide</b>									
	16	1045CST 1700CST			0	0	4K	0	Flash Flood
Hundreds of trees and power lines were knocked down across the county. At least 5500 customers were without power and the power was not fully restored in a few places for 2 to 3 days. One home was totally destroyed and 10 to 20 others received mainly minor damage. Maximum wind gusts were estimated around 65 miles an hour. Doppler radar and ground observations indicate as much as 5 inches of rain fell during Ivan. A few homes received minor water damage and one road was washed out.									
<b>ALZ025 Shelby</b>									
	16	0730CST 1500CST			0	0	1.2M	0	High Wind (G62)









# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ALABAMA, North

### **Dekalb County**

#### **Countywide**

**16 1730CST** **0 0** **Flash Flood**  
**17 0130CST**

Flash flooding was reported across the county with several roads with several inches of water standing.

### **Jackson County**

#### **Countywide**

**16 1800CST** **0 0** **Flash Flood**  
**17 0400CST**

Numerous reports of flash flooding were received with water over several roads several inches in depth.

### **Dekalb County**

#### **5 N Ft Payne to Ft Payne**

**17 0130CST** **0 0** **Flash Flood**  
**0400CST**

Several inches of water was reported across the road near Desoto State Park.

## ALABAMA, Southeast

### **ALZ065>069**

#### **Coffee - Dale - Henry - Geneva - Houston**

**15 1200EST** **0 0 3.5M** **Tropical Storm**  
**17 0000EST**

Hurricane Ivan weakened to a tropical storm as it moved north into southwest Alabama on September 16. The maximum sustained and peak wind gust recorded was 44 and 54 knots, respectively, at Dothan, AL. The lowest sea-level pressure was 1000 mb at Dothan. Rainfall amounts were quite heavy, ranging from five to eight inches. Minor flooding was reported in Coffee, Geneva, and Houston counties. Schools and many businesses were closed on September 16 and 17. An estimated 50,000 customers were without power, including 20 percent of Dothan. There were numerous reports of roads closed by fallen trees and power lines. In Coffee County, many county roads were closed and several trees fell on houses and vehicles. Some businesses were damaged in Enterprise. Several trees fell on vehicles and houses, and damaged two businesses in Dothan. In Geneva County, several mobile homes were destroyed in Hartford. Cotton farmers suffered significant yield losses, especially in Coffee and Geneva counties, which will be realized at the time of the autumn harvest. Coffee and Geneva counties were declared federal disaster areas.

## ALABAMA, Southwest

### **ALZ051>064**

#### **Choctaw - Washington - Clarke - Wilcox - Monroe - Conecuh - Butler - Crenshaw - Escambia - Covington - Upper Mobile - Upper Baldwin - Lower Mobile - Lower Baldwin**

**13 2100CST** **0 0 2.5B 25M** **Hurricane/Typhoon**  
**16 1500CST**

Hurricane Ivan affected the region from September 13 through the 16th. The coastal areas were put under a hurricane watch at 900 PM CST on September 13. The area was put under a hurricane warning at 300 PM CST on September 14. The hurricane warning was dropped at 900 AM CST on September 16 and we were put under a tropical storm warning. The tropical storm warning was dropped at 300 PM CST on September 16.

Ivan made landfall around 100 AM CST near Gulf Shores, Alabama on September 16. An interesting note, as Ivan approached the Alabama coast during the day on the 15th, a buoy just south of the Alabama coastal waters recorded a peak wave height of 52 feet, before breaking loose of its mooring. This was one of the highest wave heights ever observed.

Some of the winds recorded across Southwest Alabama were as follows: Mobile Regional Airport, sustained wind of 51 knots from the north with a peak gust of 65 knots from the north northeast. Dauphin Island, sustained wind of 61 knots from the east with a gust of 89 knots from the northeast. USS Alabama, located off the Mobile Bay causeway, peak gust 91 knots (site is more than 100 feet high). Fairhope, peak gust 63 knots. Semmes, peak gust 51 knots. Grand Bay, peak gust 62 knots. WKRG in Mobile, peak gust 64 knots. Wallace Tunnel in Mobile, peak gust 51 knots. Gulf Shores Airport, sustained winds 73 knots with a peak gust of 100 knots (Doppler on Wheels site). Fairhope, sustained wind 59 knots with a peak gust of 77 knots (Doppler on wheels).

Some of the winds across Northwest Florida were as follows: Pensacola Naval Air Station, sustained wind of 76 knots from the southeast with a gust of 93 knots from the southeast. Pensacola Regional Airport, sustained wind of 67 knots from the southeast with a peak gust of 87 knots. West Pensacola, peak gust 84 knots. Pensacola, sustained wind 70 knots with a peak gust of 92 knots (Doppler on wheels). Pace, sustained wind of 73 knots with a peak gust of 87 knots (Air Products location - about 160 feet high). Escambia county EMA office peak gust 90 knots. Eglin Air Force Base sites; 2 SW of Mary Esther, peak gust 103 knots (200 feet high). 10 S Harold, peak gust 78 knots. 10 N Mary Esther, peak gust 75 knots. 5 NE Seminole, peak gust 75 knots.

Some of the lowest sea level pressures were as follows: In Alabama: Fairhope 947.9 MB. Mobile Regional Airport 964.4 MB. Brookley Field (Mobile) 956.0 MB. Semmes 967.5 MB. Dauphin Island 952.7 MB.

In Florida: Pensacola Regional Airport 970.2 MB. Pensacola Naval Air Station 965.8 MB. 5 S Harold 981.4 MB.

Two day rainfall totals ending at midnight on September 16 were as follows: In Alabama: Mobile Regional Airport (MOB) 5.56 inches. Coden 6.30 inches. Evergreen 7.25 inches. Alberta 6.85 inches. Semmes 5.00 inches. Daphne 7.5 inches. Andalusia 9.96 inches. 2 S Mobile 9.90 inches. Silverhill 10.16 inches. Robertsedale 9.35 inches. Spanish Fort 8.00 inches.

In Florida: Pensacola Naval Air Station (NPA) 8.00 inches. Pensacola (WEAR TV) 15.79 inches. Crestview 8.40 inches. Fort Walton Beach 6.06 inches. Munson 6.5 inches. Niceville 6.55 inches. Eglin Air Force Base (VPS) 7.43 inches. 10 S Mossy Head 8.92 inches.

Storm surge values along the coast from Baldwin county east to Santa Rosa county were the highest observed in over a hundred years of record keeping. The high surge values of 10 to 14 feet caused extensive damage to homes and condos located along the Gulf beachfront, as well as along the shoreline of area inland waterways. Dauphin Island had several areas that were breached by the high surge. There was less damage on Dauphin Island than with Hurricane Frederic in 1979, even with the extensive building that has occurred on the island since 1979. In Baldwin county, the coastal areas from Fort Morgan to Gulf Shores to Orange Beach saw the worst damage from a hurricane in over a hundred years. This area has seen rapid development in the past 20 years and it

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## ALABAMA, Southwest

seemed that the homes and condo's constructed in the past five years held up better than homes that were constructed earlier. Surge values were estimated between nine and twelve feet along the Baldwin county coastline, and the beach was breached at several locations. No one died as a result of storm surge in Baldwin county.

In Escambia county Florida, surge values were estimated at ten to fourteen feet. These coastal areas were the hardest hit, with major damage occurring from Perdido Key to Pensacola Beach. Almost every structure that was on the waterfront in Escambia county suffered some degree of damage. Generally, if the property elevation was below fifteen feet, water flooded the property. Property that was on Perdido Bay, Big Lagoon, Bayou Grande, Pensacola Bay and Escambia Bay suffered major damage. Many homes were completely washed away by the high surge. Almost all of the deaths directly attributed to Ivan in Escambia County were surge related, and occurred near Big Lagoon. The beach area from Perdido Key to Pensacola Beach was breached in several places. Fort Pickens was cut off and isolated from the rest of Pensacola Beach as a result of several breaches. The highest surge values observed during the storm were in the upper reaches of Escambia Bay. The surge, and accompanying wind waves, damaged the I-10 bridge across Escambia Bay. A trucker died on the bridge when his truck plummeted off a bridge section that had been displaced by the surge. Pensacola Naval Air Station, which is located on Pensacola Bay across from Fort Pickens, suffered major damage to structures that were located on the water. Many of the structures had been built in the late 1800's, and had been through several other hurricanes with only minor damage. In Santa Rosa county, surge values were between nine and twelve feet. Navarre Beach had several breaches, and major damage occurred to almost all structures that were on the Gulf front. Major damage also occurred along the shores of Gulf Breeze and along Blackwater Bay. Some of the highest surge values in Santa Rosa county were near Ward Basin. Surge values across most locations east of where the center of the hurricane moved ashore were higher than those of hurricane George in 1998. As in Escambia county, almost every structure that was on the water in Santa Rosa county suffered some type of damage. In Okaloosa county surge values were six to nine feet. Structures that were located on or near the beach suffered major damage. Farther to the east, storm surge values dropped off, but the wave action essentially destroyed the beach, with four to eight feet of the sand eroded away. Low lying structures on Choctawatchee Bay also suffered major damage. US Highway 98 between Fort Walton and Destin was again washed away. Structures near the beach that were part of Eglin Air Force Base also suffered major damage.

The following surge values were measured in Alabama: Middle Gage at Bayou LaBatre 4.66 feet. Mobile Bay at Cedar Point 6.90 feet. Dauphin Island Bay at Dauphin Island 7.80 feet. Mobile Bay at Dauphin Island Coast Guard 8.00 feet. Mobile River at Mobile 4.87 feet. Mobile River at Bucks 6.82 feet. Mobile Bay at Fort Morgan Front Range 7.85 feet. Perdido Pass at Orange Beach 8.81 feet.

The following surge values were measured in Northwest Florida; Perdido Bay near US Highway 98 estimated 10.00 feet. GIWW at Pensacola Gulf Beach 9.68 feet. Pensacola Bay at Fort McRee 9.70 feet. Pensacola Bay at Pensacola 10.20 feet. Escambia Bay West Bank at Highway 90 12.92 feet. Escambia Bay West Bank 1.5 miles north of I-10 12.12 feet. Escambia Bay near Pace estimated 12.00 feet. GIWW at Gulf Breeze 10.30 feet. Pensacola Beach Fire Station estimated 12 feet. Yellow River near Milton 9.66 feet. Fort Walton Brooks Bridge 6.12 feet. Destin at Choctawatchee Bay Coast Guard 5.39 feet.

As Ivan moved ashore during the morning hours of September 16th, the winds caused major damage to trees along and east of the track of the storm. Hurricane force winds were felt across the entire area, including all inland counties. Most of the area probably had hurricane force winds for two to four hours. This caused 100 year old trees to break due to the constant force from the strong winds. Many of the trees fell on homes and vehicles and damaged them. While some structural wind damage would have been expected, most of the major structural damage that occurred over inland areas would not have been as substantial if it had not been for fallen trees. It was estimated that in Alabama over \$500,000,000 damage was done to timber, with an additional estimate of \$250,000,000 in Escambia, Santa Rosa and Okaloosa counties in Florida. Power was out for a week or more across the inland areas due to trees across lines.

Along the immediate coast, power was not restored for an additional several weeks, until much of the infrastructure was rebuilt.

It was estimated that six weak tornadoes occurred across the area during the afternoon and early evening of September 15th as Ivan neared the coast. These weak tornadoes occurred in Escambia and Santa Rosa counties in Florida, and in Baldwin, Escambia and Conecuh in Alabama and produced only minor damages.

Eight deaths were directly related to Ivan. Seven of these were in Escambia county with one in Santa Rosa county. In Escambia county Florida: Four people (three women and one male) drowned at different locations around Grand Lagoon as the surge inundated the area. A male drowned after his truck ran off the damaged I-10 bridge. A female died of a heart attack in a shelter just before Ivan moved ashore. A male died when a tree fell on him as Ivan was moving ashore. In Santa Rosa county, a young female died when a tree fell on their manufactured home and killed her.

Sixteen deaths were indirectly related to Ivan. In Escambia county Florida: A 7 year old boy was killed as he was watching someone remove a tree and a large limb fell on him. A 55 year old male committed suicide when he became depressed because of the damage his home sustained as a result of Ivan. A 58 year old female died when she was overcome by fumes from a generator that was not properly ventilated. A 41 year old male died in a traffic accident at an intersection with no power and no stop lights. A 83 year old male fell off a roof while repairing damage from Ivan. A 63 year old male fell out of a tree in Escambia county Alabama and was taken to a Pensacola hospital where he later died from injuries sustained in the fall. A 40 year old male died when a tree fell on him. In Santa Rosa county: A 67 year old male died of a heart attack preparing for Ivan. A 76 year old male died of a heart attack. A 56 year old male died of a heart attack cleaning up days after the storm. In Okaloosa county: A 54 year old female died of a heart attack when emergency crews could not get to her due to the storm. A 51 year old male died of a heart attack. A 50 year old female died days after Ivan from a drug overdose due to depression cause by the storm.

In Covington county a 75 year old female died from a fire caused by a candle used for light after the storm. In Conecuh county a 34 year old male died from a car accident when he hit debris still in the road from the storm. In Mobile county a 59 year old male died when a tree fell on him after the storm.

Agriculture interests suffered a major blow from Ivan with most of the soybean and pecan crop destroyed. The cotton crop also suffered damage but not as bad as that of the soybean and pecan crop.

Ivan will be remembered as being one of the most damaging hurricanes to affect the coastal counties of Baldwin, Escambia and Santa Rosa in modern history. It will also be remembered as one of the most damaging hurricanes to affect the inland counties of

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ALABAMA, Southwest

Escambia, Clarke, Monroe, Conecuh and Butler in southwest Alabama.

### **Baldwin County**

3 SE Josephine to  
1 SW Josephine

15 1302CST 3 30 0 0 3K Tornado (F0)  
1306CST

A weak tornado entered Baldwin county from Escambia county in Florida near Ono Island and moved rapidly west northwest and dissipated just southwest of Josephine. The weak tornado caused minor damage. Most of the area had been evacuated due to Hurricane Ivan.

### **Escambia County**

1 W Dixie to  
4 NW Dixie

15 1820CST 3 30 0 0 3K Tornado (F0)  
1823CST

A weak tornado developed ahead of Hurricane Ivan just west of Dixie. The weak tornado moved quickly west northwest and dissipated about four miles northwest of Dixie. The weak tornado caused minor tree damage.

### **Conecuh County**

2 S Castleberry to  
2 SW Castleberry

15 1840CST 1 30 0 0 2K Tornado (F0)  
1842CST

A weak tornado developed about two miles south of Castleberry and dissipated just southwest of Castleberry. The weak tornado caused minor damage to timber.

### **Baldwin County**

East Portion

16 0300CST 0 0 Flash Flood  
0500CST

As Hurricane Ivan was moving inland, a band of very heavy rainfall developed east of the center. Radar estimated that five to seven inches of rain fell in a two hour period across the area. This caused most of the roads in the east part of the county to flood. This was in addition to the high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

### **Escambia County**

West Portion

16 0500CST 0 0 Flash Flood  
0600CST

As Hurricane Ivan was moving inland, a band of very heavy rainfall developed near and east of the center. Radar estimated that four to six inches of rain fell in a one hour period across the area. This caused most of the roads in the west part of the county to flood. This was in addition to the high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

### **Monroe County**

South Portion

16 0500CST 0 0 Flash Flood  
0600CST

As Hurricane Ivan was moving inland, a band of very heavy rainfall developed near and east of the center. Radar estimated that four to six inches of rain fell in a one hour period across the area. This caused most of the roads in the south part of the county to flood. This was in addition to the high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

### **ALZ063>064**

#### **Lower Mobile - Lower Baldwin**

22 2300CST 0 0 Heavy Surf/High Surf  
23 1400CST

About a week after Hurricane Ivan impacted the area on September 16th, the remnants of the storm re-entered the Gulf of Mexico after making a large clockwise loop over the southeastern United States.

As a result, high waves and surf action again impacted already heavily eroded area beaches. The high water hindered clean up efforts along the coast. The water also ended up under homes that had severe erosion a week earlier. Part of the causeway across Mobile Bay had to be closed for several hours due to high water. As the remnants of Ivan slowly moved off to the northwest over the western Gulf, the high surf subsided.

## ALASKA, Northern

### **AKZ207**

#### **Chukchi Sea Coast**

23 0000AST 0 0 Storm Surge  
25 0300AST

A low pressure center tracked northeast over the southern Bering Sea on the 21st and then curved north over inland western Alaska on the 22nd; and low pressure remained over north interior Alaska and the North Slope of Alaska through the 25th. This set up northwest flow over the southern Chukchi Sea creating minor coastal flooding and some shore erosion at Shishmaref. About 1 foot of coastline was removed by the erosion from waves. Though reported wind speeds were not available, winds of 30 to 40 mph were forecast during the event.

### **AKZ226**

#### **Ne. Slopes Of The Ern Ak Rng**

26 1400AST 0 0 High Wind (G52)  
1630AST

A weather front moved north from the Gulf of Alaska on the afternoon of the 26th and brought south winds up over the eastern Alaska Range. The Army's Mesonet station called Texas Range reported a peak gust to 60 mph (52 kt).

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ALASKA, Northern

**AKZ226**

### **Ne. Slopes Of The Ern Ak Rng**

27	0000AST	0	0	Heavy Snow
28	0700AST			

A cold front moving east across the interior of Alaska created heavy snowfall over the Isabel Pass region of the Richardson Highway through the Alaska Range. Twelve to 18 inches of snow fell over the highway during the period, as reported by the State of Alaska Department of Transportation's Trims Camp foreman.

## ALASKA, Southeast

**AKZ017-020>021**

### **Cape Fairweather To Cape Suckling Coastal Area - Glacier Bay - Eastern Chichagof Island**

18	0500AST	0	0	Frost/Freeze
19	0800AST			

The growing season officially ended due to a hard freeze on these dates in these regions of Southeast Alaska. The temperature in Yakutat was measured at 27 deg F, while Hoonah dipped to 28 deg F. Gustavus experienced 6 hours with temperatures below freezing (the other criteria for Freeze Warnings).

**AKZ017**

### **Cape Fairweather To Cape Suckling Coastal Area**

26	0240AST	0	0	High Wind (G57)
	0340AST			

A low lifted up into Cook Inlet from the Aleutian chain on this date. High easterly winds developed in Southcentral Alaska out ahead of this system. High winds were confined to the extreme western portion of AOR, from Icy Cape to Cape Suckling. Though there is no way to verify in this uninhabited region of the Alaska coast, mariners confirmed conditions in the region. The sensor on Middleton Island measured a peak wind gust to 57 knots (66 mph) from 120 degrees. Yakutat only received a peak gust to 35 mph from this storm.

## ALASKA, Southern

**AKZ155**

### **Kuskokwim Delta**

09	1800AST	0	0	Flood
10	0135AST			

A strong storm in the Bering Sea created a long fetch with high wind. This produced a coastal storm surge resulting in minor coastal flooding along the Kuskokwim Delta.

**AKZ101**

### **Anchorage Muni To Bird Creek**

25	0730AST	0	0	Heavy Snow
	1700AST			

An unusually early and record breaking heavy snow occurred over the Anchorage bowl on Saturday, September 25th. A low in the northern Pacific created a strong moist southerly fetch over the south central region Saturday. The existing low level cold air held in the area long enough to result in 6 inches of snow over most of the Anchorage bowl north to Eagle River before the warm air resulted in the snow changing over to rain. This was the record for most snow this early Anchorage. The wet heavy snow accumulated on the trees causing many power outages.

**AKZ141**

### **Copper River Basin**

28	0530AST	0	0	Heavy Snow
29	2000AST			

A strong moist southerly flow into the Copper River Basin resulted in heavy snow along south facing up slope areas of the Alaska Range. The Slana Ranger Station reported 16 inches of snow overnight September 28th to the morning of the 29th.

**AKZ145**

### **Susitna Valley**

29	2100AST	0	0	Heavy Snow
30	1305AST			

A low moved from the southwest Gulf of Alaska into the Susitna Valley Late Wednesday into Thursday. This resulted in a strong push of moisture into the Susitna Valley over the colder air in the northern Susitna Valley. The Orographic lift typical of the "bench" near Chulitna resulted in heavy snow beginning late Wednesday night that continued until the snow changed over to rain Thursday afternoon. The cooperative observer reported that 12 inches of snow fell from 10 p.m. Wednesday night through Thursday morning.

**AKZ145**

### **Susitna Valley**

30	2000AST	0	0	Flood
	2359AST			

A strong Bering Sea storm pushed extremely moist air into the south central region of Alaska beginning Wednesday, September 29th. Heavy rain and snow occurred over the previous weekend resulting in saturated soil throughout the region. Rainfall of moderate to heavy rates was reported by observation sites in the Susitna Valley south to the Anchorage bowl beginning late Wednesday through late Thursday. Amounts of 2 to 3 inches were observed across this region with higher estimated amounts along the Chugach and Talkeetna Mountains. This resulted in the small streams in the Anchorage Bowl and in the central Susitna Valley, which were already elevated from the weekend storm, to rise above bank full stage and cause minor flooding.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## ARIZONA, Central and Northeast

### **Navajo County**

<b>Jack Rabbit</b>	<b>29</b>	<b>1250MST 1305MST</b>	<b>3</b>	<b>100</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
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A tornado was on the ground for about 15 minutes about 10 miles east of Winslow and 5 miles north of Jack Rabbit. The tornado was visible from Interstate 40 and an ADOT employee was able to photograph the tornado at milepost 162.

## ARIZONA, Northwest

### **Mohave County**

<b>Lake Havasu City</b>	<b>08</b>	<b>1713PST 1737PST</b>			<b>0</b>	<b>0</b>	<b>10K</b>		<b>Thunderstorm Wind (G50)</b>
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Strong winds from a severe thunderstorms pushed through Lake Havasu City. Several trees were blown over, one house received roof damage and a construction trailer was overturned.

### **Mohave County**

<b>10 SW Colorado City</b>	<b>11</b>	<b>1330PST 1420PST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
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There were 15 different reports of funnel clouds southwest of Colorado City.

### **Mohave County**

<b>Kingman</b>	<b>19</b>	<b>0208PST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G57)</b>
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The Kingman ASOS reported a wind gust of 66 mph.

## ARIZONA, South

NOT RECEIVED.

## ARIZONA, Southwest

### **Maricopa County**

<b>Phoenix to Fountain Hills</b>	<b>03</b>	<b>1710MST 1745MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G60)</b>
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Several lines or clusters of thunderstorms developed along a moisture boundary that extended from near Gila Bend to Payson. Microburst winds over 55 mph took down trees, power lines, and damaged homes and buildings over parts of eastern Maricopa County. In Mesa, about 130 trees were blown down at a cemetery, and a large funeral canopy was blown 200 feet onto a car at a neighboring apartment.

### **Maricopa County**

<b>Chandler</b>	<b>03</b>	<b>1830MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
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### **Pinal County**

<b>Florence to 2 N Apache Jct</b>	<b>03</b>	<b>1845MST 1900MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G60)</b>
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Trees uprooted on the east side of Florence, power poles blown down in Apache Junction.

### **Gila County**

<b>10 ESE Roosevelt</b>	<b>03</b>	<b>1945MST</b>			<b>0</b>	<b>0</b>			<b>Heavy Rain</b>
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Up to 3/4 inch of rain in 20 minutes, along with pea size hail and strong winds were reported at Roosevelt Estates.

### **Yuma County**

<b>Araby to Yuma</b>	<b>08</b>	<b>1946MST 2000MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G60)</b>
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Thunderstorms moved westward across parts of Yuma County after 6 pm. Strong winds and dense blowing dust resulted across much of Yuma, with tree limbs blowing down onto power lines. At the Yuma Proving Ground, winds were clocked at 52 mph at 8 pm.

### **Pinal County**

<b>10 NW Florence to Queen Vly</b>	<b>18</b>	<b>1600MST 1900MST</b>			<b>0</b>	<b>0</b>	<b>2M</b>		<b>Flash Flood</b>
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Local areas of heavy rainfall developed within a tropical-like environment across much of south-central Arizona. Locally windy conditions preceded the showers and thunderstorms during the late afternoon hours. A rather narrow band of heavy rain developed over mainly rural areas of northern Pinal County, which resulted in flooded homes and roads. Three to 5 inches of rain was reported in a 70 minute period in one northern portion of Pinal County, according to the county emergency manager. The worst damage occurred in the community of Queen Valley, where the sewage treatment plant had an initial damage estimate of \$1.5 million. Gov. Napolitano declared an emergency and designated \$200,000 to help repair roads and the sewage treatment plant. Several water rescues were made, and cars were washed out of carports. Flood waters carried various types of debris, and a propane tank was found in a tree.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>ARIZONA, Southwest</u></b>									
<b>AZZ028</b>									
<b>Central Deserts</b>									
<b>18</b>	<b>1608MST</b>				<b>0</b>	<b>2</b>			<b>Dust Storm</b>
									Poor visibility due to blowing dust was blamed on a multiple car pile-up on Interstate 10 at Riggs Road. Two people were seriously injured.
<b>Maricopa County</b>									
<b>Cave Creek</b>	<b>18</b>	<b>1730MST</b>			<b>0</b>	<b>0</b>	<b>20K</b>		<b>Thunderstorm Wind (G60)</b>
									Strong winds severely damaged a large part of the Cave Creek Roadhouse in Cave Creek.
<b>La Paz County</b>									
<b>Parker</b>	<b>19</b>	<b>0200MST</b> <b>0400MST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
									Very heavy rain resulted in flooding of homes and highways in the Parker area. One gauge indicated 1.15 inches.
<b>La Paz County</b>									
<b>1 N Quartzsite</b>	<b>19</b>	<b>0530MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G60)</b>
									Winds knocked down 3 power poles resulting in a 12 hour power outage for Quartzsite residents.
<b><u>ARKANSAS, Central and North Central</u></b>									
<b>Johnson County</b>									
<b>Ludwig</b>	<b>24</b>	<b>1530CST</b> <b>1700CST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
									Heavy rains caused flash flooding to occur in the Ludwig area. Several streets were flooded along Highway 292.
<b><u>ARKANSAS, East</u></b>									
									NONE REPORTED.
<b><u>ARKANSAS, Northwest</u></b>									
									NONE REPORTED.
<b><u>ARKANSAS, Southeast</u></b>									
									NONE REPORTED.
<b><u>ARKANSAS, Southwest</u></b>									
									NONE REPORTED.
<b><u>ATLANTIC OCEAN</u></b>									
<b>Great Egg Inlet To Cp</b>									
<b>May Nj Out 20Nm</b>									
<b>1 E Sea Isle City to</b>	<b>03</b>	<b>1030EST</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Waterspout</b>
<b>.1 E Sea Isle City</b>									
									A waterspout formed just off the coast from Sea Isle City and dissipated as it reached the shore.
<b>Cp Charles Lt Va To</b>									
<b>Nc-Va Bdr Out 20Nm</b>									
<b>Cape Charles Light to</b>	<b>17</b>	<b>2112EST</b>			<b>0</b>	<b>0</b>			<b>Marine Tstm Wind</b>
<b>Nc-Va Border</b>									
									Wind gust of 34 knots measured at CHLV2.
<b>Chesapeake Bay New</b>									
<b>Pt Comfort To Cp</b>									
<b>Henry Va</b>									
<b>Kiptopeke</b>	<b>17</b>	<b>2118EST</b>			<b>0</b>	<b>0</b>			<b>Marine Tstm Wind</b>
									Wind gust of 39 knots measured at Kiptopeke.
<b>Nc-Va Bdr To</b>									
<b>Currituck Beach Lt</b>									
<b>Out 20Nm</b>									
<b>Nc-Va Border to</b>	<b>17</b>	<b>2130EST</b>			<b>0</b>	<b>0</b>			<b>Marine Tstm Wind</b>
<b>Currituck Beach Light</b>									
									Wind gust of 40 knots measured at Duck, North Carolina.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>ATLANTIC OCEAN</u></b>									
<b>Currituck Sound</b>									
Currituck	17	2154EST			0	0			Marine Tstm Wind
									Wind gust of 36 knots measured at ECG.
<b>Cp Charles Lt Va To Nc-Va Bdr Out 20Nm</b>									
Cape Charles Light to Nc-Va Border	17	2212EST			0	0			Marine Tstm Wind
									Wind gust of 38 knots measured at CHLV2.
<b>Chesapeake Bay Smith Pt To Windmill Pt Va</b>									
Smith Pt to Windmill Point	17	2224EST			0	0			Marine Tstm Wind
									Wind gust of 35 knots measured at Lewisetta.
<b>Nc-Va Bdr To Currituck Beach Lt Out 20Nm</b>									
Nc-Va Border to Currituck Beach Light	17	2230EST			0	0			Marine Tstm Wind
									Wind gust of 42 knots measured at Duck, North Carolina.
<b>Chesapeake Bay New Pt Comfort To Cp Henry Va</b>									
Kiptopeke	17	2254EST			0	0			Marine Tstm Wind
									Wind gust of 43 knots measured at Kiptopeke.
<b>Long Island Sound E Of New Haven Ct To Port Jefferson Ny</b>									
5 W Fishers Island	18	1032EST			1	0			Marine Tstm Wind
									Heavy rain bands with embedded thunderstorms over Eastern Long Island Sound produced wind gusts up to 43 knots. This resulted in a 31 foot boat capsizing near Niantic Bay. Two men were thrown into the water. One of them was killed. The boat sustained significant structural damage. M?IW
<b>Chesapeake Bay Smith Pt To Windmill Pt Va</b>									
Smith Pt to Windmill Point	28	1424EST			0	0			Marine Tstm Wind
									Wind gust of 34 knots measured at Lewisetta.
<b>Chesapeake Bay New Pt Comfort To Cp Henry Va</b>									
New Point Comfort to Cape Henry	28	1430EST			0	0			Marine Tstm Wind
									Wind gust of 36 knots measured at the Chesapeake Bay Bridge Tunnel.
<b>Cp Charles Lt Va To Nc-Va Bdr Out 20Nm</b>									
Cape Charles Light to Nc-Va Border	28	1512EST			0	0			Marine Tstm Wind
									Wind gust of 37 knots measured at CHLV2.
<b><u>CALIFORNIA, Extreme Southeast</u></b>									
									NONE REPORTED.
<b><u>CALIFORNIA, North Central</u></b>									
									NONE REPORTED.
<b><u>CALIFORNIA, Northeast</u></b>									
CAZ073	Mono								
19	0950PST				0	0			High Wind (G59)
									A 59 kt (68 mph) wind gust was reported at Mono Lake Visitors Center.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CALIFORNIA, Northwest

NOT RECEIVED.

## CALIFORNIA, South Central

**CAZ090-095-097 E Central S.J. Valley - Kern Cty Mtns - Tulare Cty Mtns**

<b>01</b>	<b>0000PST</b>	<b>0</b>	<b>0</b>	<b>Drought</b>
<b>26</b>	<b>2359PST</b>			

The March through May 2004 time period was the 2nd driest on record for the South-Central portion of California as determined by rainfall for the Kern County Mountains and Tulare County Mountains of the Southern Sierra Nevada. Below normal for all of the Southern Sierra Nevada rivers, the Kern River April through July snow melt was only 48% of normal determined by the inflow to Lake Isabella Reservoir. The previous six California Water Years (July through June) have averaged only 81% of normal precipitation. The dry conditions for the 6-year period were actually much worse as 5 of the years averaged approximately 70% of normal rainfall.

**CAZ089>092**

**W Central S.J. Valley - E Central S.J. Valley - Sw S.J. Valley - Se S.J. Valley**

<b>05</b>	<b>1400PST</b>	<b>0</b>	<b>0</b>	<b>Excessive Heat</b>
<b>11</b>	<b>1800PST</b>			

One of the warmest spells of the dry season occurred late between the 5th and 11th of the month. The already dry conditions of the area were intensified by such a late hot spell as Central and Southern San Joaquin Valley temperatures climbed widespread to over 100 degrees F. The 8th and 9th of the month were the warmest as Fresno reached 105F on the 8th and both Fresno and Bakersfield reported 103F on the 9th.

**Merced County**

<b>25 NNW (Mer) Castle Af</b>	<b>19</b>	<b>1700PST</b>	<b>0</b>	<b>0</b>	<b>Lightning</b>
-------------------------------	-----------	----------------	----------	----------	------------------

A rather significant trof and associated front swung through the North San Joaquin Valley affecting Merced County and points northward on the 19th. Some embedded convection occurred with the front as lightning occurred in the Oakdale area just north of the Merced County Line at 6 PM PDT. More importantly, temperatures dipped significantly below normal in a pattern more closely resembling a winter-type weather pattern than that of the warm season. The Merced Airport reported 1/10th of an inch of rain and lead to some local field flooding and other inconveniences for agricultural operations in the Merced County area.

## CALIFORNIA, Southeast

**San Bernardino**

**County**

<b>Nipton</b>	<b>09</b>	<b>1137PST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
		<b>1230PST</b>			

Flash flooding near Nipton caused Nipton Rd to be completely washed out and impassable.

**San Bernardino**

**County**

<b>Nipton</b>	<b>09</b>	<b>1245PST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
		<b>1330PST</b>			

Flash flooding caused several roads to be closed near the town of Nipton. Rocks and debris covered the road in several locations.

**San Bernardino**

**County**

<b>5 E Twenty Nine Palms</b>	<b>10</b>	<b>1500PST</b>	<b>0</b>	<b>0</b>	<b>50K</b>	<b>Flash Flood</b>
<b>6 E Twenty Nine Palms</b>		<b>1600PST</b>				

Several swift water rescues along with several vehicles underwater just east of Twentynine Palms.

**San Bernardino**

**County**

<b>10 E San Bernardino</b>	<b>10</b>	<b>1600PST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
		<b>1700PST</b>			

Law enforcement reported Amboy Rd. was closed from Twentynine Palms to Sheep Hole Pass. Power lines were also down along with debris in the roadway.

**San Bernardino**

**County**

<b>5 S Nipton</b>	<b>10</b>	<b>1617PST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
		<b>1700PST</b>			

Law enforcement reported Ivanpah and Nipton roads were closed due to flash flooding.

**San Bernardino**

**County**

<b>20 E Twenty Nine Palms</b>	<b>10</b>	<b>1907PST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
		<b>2030PST</b>			

Law enforcement reported several feet of water over State Rte 62 just east of Iron Age Rd.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CALIFORNIA, Southeast

### San Bernardino County

**Lenwood**                      **10**        **1945PST**                                      **1**        **1**                                      **Lightning**

A tow truck driver was in the process of hooking up a winch to a stalled vehicle when lightning struck. The driver of the stalled car was killed and the tow truck driver was taken to the hospital.

M?OU

### San Bernardino County

**15 NE Barstow**                      **11**        **1730PST**  
**1815PST**                                      **0**        **0**                                      **Flash Flood**

A 10 mile stretch of Fort Irwin Rd was under 12 to 14 inches of water. Huge boulders and mud all over the road and is completely impassable.

### Inyo County Death Vly

**11**        **2017PST**  
**2215PST**                                      **0**        **0**                                      **Flash Flood**

Flash flooding occurred over Highway 178 in Death Valley between Mormon Point and Jubilee Pass. Reports said several hundred feet of roadway were washed away and many points along the road were impassable with rocks and debris.

## CALIFORNIA, Southwest

### CAZ056

#### Riverside County Mountains

**01**        **0940PST**  
**1400PST**                                      **0**        **0**        **0**                                      **Wildfire**

A small brush fire burned 2 to 4 acres on the west side of Hwy. 371 near Aguanga.

### CAZ049

#### Riverside County Valley/The Inland Empire

**02**        **1230PST**  
**03**        **1800PST**                                      **0**        **0**        **35K**                                      **Wildfire**

Named the Morales Fire, this fire consumed 250 acres southeast of Temecula, and destroyed 2 trailers, 3 abandoned vehicles, 3 outbuildings, and 2 ATVs. The wind at about the time of the fire was between 5 and 15 mph, with an air temperature in the 90s and relative humidity of less than 20%.

### CAZ049

#### Riverside County Valley/The Inland Empire

**03**        **1024PST**  
**1300PST**                                      **0**        **0**        **0**        **0**                                      **Wildfire**

Named the Ruby Fire, this fire consumed 1 acre near the Redhawk Golf Course in Temecula.

### CAZ042

#### Orange County Coastal Plain

**05**        **0900PST**  
**06**        **1500PST**                                      **0**        **0**                                      **Heavy Surf/High Surf**

Powerful surf ranging in size from 6 to 12 ft generated by Hurricane Howard resulted in over 1000 rescues during the hottest day of the year at Orange County beaches. 25 people were rescued in one incident alone at Main Beach in Laguna when a dozen 8-10 ft waves overpowered a group of swimmers. The combination of widespread 100 degree temperatures and 72 degree water temperatures drove an estimated 575,000 people to Orange County beaches over the Labor Day weekend.

### San Diego County Vista

**05**        **1335PST**                                      **0**        **0**        **0.10K**                                      **Dust Devil**

A strong dust devil ripped a sign off a fence and threw it 40 feet away over a house. Other debris was seen flying through the air around the dust devil.

### CAZ050

#### San Diego County Valleys

**06**        **1145PST**  
**1500PST**                                      **0**        **0**                                      **Wildfire**

This fire burned 65 acres of brush two miles south of the San Diego Wild Animal Park in the San Pascual Valley. It was started by a boy playing with fireworks.

### CAZ050

#### San Diego County Valleys

**06**        **1400PST**  
**1530PST**                                      **0**        **0**        **0**                                      **Wildfire**

This fire burned 15 acres about 3 miles north of Valley Center near Lilac Knolls Road.

### CAZ050

#### San Diego County Valleys

**06**        **1500PST**  
**1600PST**                                      **0**        **0**        **0**                                      **Wildfire**

This fire burned 5 acres east of Chula Vista near Proctor Valley Rd.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CALIFORNIA, Southwest

<b>CAZ057</b>	<b>Santa Ana Mountains And Foothills</b>								
	21	0730PST 0930PST			0	0	0		<b>High Wind (G69)</b>
	Fremont Canyon RAWs measured sustained winds over 40 mph for 2 hours and gusts over 60 mph for 3 hours. Gusty winds resulted in blown down tree branches all across the inland empire.								
<b>CAZ043</b>	<b>San Diego County Coasts</b>								
	22	1530PST 2000PST			0	0	0		<b>Wildfire</b>

A fire near Rattlesnake Canyon at Camp Pendleton burned approximately 120 acres of brush.

## CALIFORNIA, Upper

<b>CAZ084&gt;085</b>	<b>Northeast Siskiyou And Northwest Modoc Counties - Modoc County</b>								
	20	2030PST			0	0			<b>Frost/Freeze</b>
	21	0800PST							
	See below.								
	A Freeze Warning was issued for the above listed zones, effective at the above listed times. Reported low temperatures in the area ranged from 22 to 31 degrees, so the warning verified well.								

## CALIFORNIA, West South Central

NONE REPORTED.

## CALIFORNIA, Western

NONE REPORTED.

## CARIBBEAN SEA AND TROPICAL ATLANTIC

<b>Deerfield Beach To Ocean Reef Fl</b>									
6 SE Government Cut	05	1400EST			0	0			<b>Marine Tstm Wind</b>
A thunderstorm wind gust of 48 knots was observed at the C-MAN at Fowey Rocks Light.									
<b>S Santee R To Edisto Beach Sc Out 20Nm</b>									
Folly Beach	06	0721EST			0	0			<b>Marine Tstm Wind</b>
<b>Savannah Ga To Altamaha Sd Ga Out 20Nm</b>									
19 E Sapelo Island	06	0800EST			0	0			<b>Marine Tstm Wind</b>
<b>Deerfield Beach To Ocean Reef Fl</b>									
6 SE Government Cut	06	2032EST			0	0			<b>Marine Tstm Wind</b>
A thunderstorm wind gust of 36 knots was measured at the C-MAN at Fowey Rocks Light.									
<b>Edisto Beach Sc To Savannah Ga Out 20Nm</b>									
1 E Fripp Island	10	0732EST 0740EST			0	0			<b>Waterspout</b>
<b>Deerfield Beach To Ocean Reef Fl</b>									
6 SE Government Cut	13	0824EST			0	0			<b>Marine Tstm Wind</b>
A thunderstorm produced a wind gust of 37 knots at Fowey Rocks Light.									
<b>Atl Nearshore Waters Rio Guajataca Pr Ewd Thru Usvi</b>									
Red Hook St Thomas	16	1255AST			0	0			<b>Waterspout</b>

A large waterspout was reported between Big Thatch and Jost Van Dyke in the British Virgin Islands.

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
<b><u>CARIBBEAN SEA AND TROPICAL ATLANTIC</u></b>									
<b>Charleston Harbor</b>									
5 NE The Charleston Battery	17	1539EST			0	0			Marine Tstm Wind
Thunderstorm winds gusted to 43 kt at the Wando port terminal.									
<b>Charleston Harbor</b>									
The Charleston Battery	17	1545EST			0	0			Marine Tstm Wind
<b>Little R Inlet Nc To Murrells Inlet Sc Out 20Nm</b>									
Myrtle Beach	17	1630EST			0	0			Marine Tstm Wind
Springmaid Pier recorded a 38 kt wind gust.									
<b>Cp Fear To Little R Inlet Nc Out 20Nm</b>									
Little River Inlet	17	1700EST			0	0			Marine Tstm Wind
A measured 40 kt gust was recorded by National Ocean Service equipment.									
<b>Surf City To Cp Fear Nc Out 20Nm</b>									
Masonboro Inlet	17	1736EST 1842EST			0	0			Marine Tstm Wind
National Ocean Service equipment located on Johnny Mercer Pier recorded a 36 kt wind gust. Gusts of 35 kt or higher continued intermittently for the next couple of hours.									
<b>Deerfield Beach To Ocean Reef Fl</b>									
1 E Port Everglades	19	0930EST			0	0			Waterspout
A waterspout was seen in the Atlantic offshore Fort Lauderdale Beach.									
<b>Deerfield Beach To Ocean Reef Fl</b>									
2 E Miami Beach	19	0946EST			0	0			Waterspout
A waterspout was seen in the Atlantic.									
<b>Deerfield Beach To Ocean Reef Fl</b>									
6 SE Government Cut	26	1430EST			0	0			Marine Tstm Wind
The C-MAN station at Fowey Rocks Light reported a thunderstorm wind gust of 36 knots.									
<b>Savannah Ga To Altamaha Sd Ga Out 20Nm</b>									
19 E Sapelo Island	27	1050EST			0	0			Marine Tstm Wind
The buoy at Grays Reef gusted to 37 kt associated with Tropical Storm Jeanne.									
<b><u>COLORADO, Central and Northeast</u></b>									
<b>COZ035 Larimer &amp; Boulder Counties Between 6000 &amp; 9000 Feet</b>									
04		1700MST			1	0			Winter Weather/Mix
A hiker froze to death on the summit of Longs Peak as an early season snowstorm, accompanied by strong winds and freezing temperatures, moved through the region. The hiker was found wearing only tennis shoes, jeans and a hooded sweatshirt.									
M26OU									
<b>Larimer County</b>									
Ft Collins	14	1434MST			0	0			Hail (0.88)
<b>Larimer County</b>									
Ft Collins	14	1437MST			0	0			Hail (1.00)
<b>Washington County</b>									
3 SSW Woodrow	14	1515MST			0	0			Hail (0.88)
<b>Washington County</b>									
1 SE Woodrow	14	1516MST			0	0			Hail (0.88)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **COLORADO, Central and Northeast**

<b>Weld County</b>									
3 N Galetton	14	1521MST			0	0			Hail (0.88)
<b>Washington County</b>									
9 SSW Akron	14	1528MST			0	0			Hail (0.88)
<b>Washington County</b>									
7 S Akron	14	1540MST			0	0			Hail (1.00)
<b>Washington County</b>									
7 S Platner	14	1557MST			0	0			Hail (1.00)
<b>Washington County</b>									
9 S Otis	14	1614MST			0	0			Hail (1.75)
<b>Washington County</b>									
Akron	14	1830MST			0	0			Hail (1.00)
<b>Washington County</b>									
1 NE Otis	14	1904MST			0	0			Hail (0.75)
<b>Park County</b>									
Bailey	28	1430MST			0	0			Hail (1.00)
<b>Weld County</b>									
14 SE Greeley	28	1518MST			0	0			Hail (0.75)
<b>Arapahoe County</b>									
Littleton	28	1745MST			0	0			Hail (0.75)
<b>Douglas County</b>									
14 NW Castle Rock	28	1749MST			0	0			Hail (0.75)
<b>Larimer County</b>									
34 W Virginia Dale	28	1824MST			0	0			Hail (1.00)
<b>Lincoln County</b>									
25 WSW Karval	30	1115MST			0	0			Hail (1.75)

## **COLORADO, East Central**

<b>Yuma County</b>									
4 SSE Vernon	09	1325MST			0	0			Thunderstorm Wind (G65)
									Four sections of irrigation pivot blown over.
<b>Yuma County</b>									
8 SSW Yuma	14	1626MST			0	0			Hail (0.88)
<b>Yuma County</b>									
3 SE Yuma	14	1627MST			0	0			Hail (0.88)
<b>Yuma County</b>									
4 S Yuma	14	1631MST			0	0			Hail (1.00)
<b>Yuma County</b>									
Eckley	14	1658MST			0	0			Hail (0.75)
<b>Yuma County</b>									
Vernon	14	1658MST			0	0			Hail (1.75)
<b>Yuma County</b>									
7 W Wray	14	1710MST			0	0			Hail (0.75)
<b>Yuma County</b>									
5 NW Wray	14	1716MST			0	0			Hail (0.88)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## COLORADO, East Central

### **Yuma County**

Wray	14	1719MST			0	0			Hail (1.00)
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### **Yuma County**

10 S Wray	14	1721MST			0	0			Hail (1.75)
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Windows broken out of vehicle on highway.

### **Yuma County**

Wray	14	1721MST			0	0			Hail (0.88)
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### **Yuma County**

12 SE Wray	14	1725MST			0	0			Hail (2.00)
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One window on west side of house broken.

### **COZ091**

#### **Kit Carson County**

14	2047MST			0	0				High Wind (G63)
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Non-convective wind gust.

### **Cheyenne County**

2 S Arapahoe	24	1518MST			0	0			Hail (0.75)
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### **Cheyenne County**

5 ESE Cheyenne Wells	24	1538MST			0	0			Hail (0.88)
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### **Cheyenne County**

Cheyenne Wells	24	1608MST			0	0			Hail (1.00)
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### **Cheyenne County**

Cheyenne Wells	24	1623MST			0	0			Hail (0.75)
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### **Cheyenne County**

Cheyenne Wells	30	1355MST			0	0			Hail (0.88)
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### **Cheyenne County**

Cheyenne Wells	30	1355MST			0	0			Thunderstorm Wind (G52)
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## COLORADO, South Central and Southeast

### **Prowers County**

14 N Holly	24	1445MST 1530MST			0	0			Hail (1.00)
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Hail occurred for 45 minutes and completely covered the ground several inches deep.

### **Baca County**

Springfield	24	1630MST 1720MST			0	0	100K		Hail (1.75)
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Hail occurred for nearly an hour, ranging from one inch to 1.75 inches in diameter.

### **Prowers County**

13 N Holly	24	1745MST 2030MST			0	0			Flash Flood
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Heavy thunderstorm rains caused flooding of Horse Creek and West Wildhorse Creek.

### **Prowers County**

Lamar	24	1851MST 1856MST			0	0			Hail (0.88)
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### **Prowers County**

Lamar	24	1912MST 1917MST			0	0			Hail (1.00)
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### **Teller County**

Woodland Park	28	1452MST 1515MST			0	0			Hail (1.00)
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### **Custer County**

Silver Cliff	28	1613MST 1620MST			0	0			Hail (0.75)
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# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## COLORADO, South Central and Southeast

### El Paso County

1 NE Black Forest 30 1210MST 1 100 0 0 Tornado (F0)  
1213MST

A short lived tornado one mile northeast of the intersection of Volmer Road and Black Forest Road caused no known damage. It passed through open country in a construction area.

### El Paso County

3 S Falcon 30 1340MST 0 0 Hail (0.75)  
1345MST

## COLORADO, West

### COZ001>014-017>023

Lower Yampa River Basin - Central Yampa River Basin - Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Upper Yampa River Basin - Grand Valley - Debeque To Silt Corridor - Central Colorado River Basin - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - Central Gunnison And Uncompahgre River Basin - West Elk And Sawatch Mountains - Flattop Mountains - Upper Gunnison River Valley - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains - Southwestern San Juan Mountains - Paradox Valley / Lower Dolores River Basin - Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin

01 0000MST 0 0 Drought  
30 2359MST

Remnants of an eastern Pacific Hurricane transported moisture across western Colorado and resulted in areas of heavy rain early in the month. Unseasonably cold temperatures also brought significant snow accumulations to portions of the mountains. Because of this precipitation, there was a slight decrease in the areal extent of severe to extreme drought conditions across western Colorado. Otherwise, abnormally dry to severe drought conditions persisted. Please see the October 2004 Storm Data publication for a continuation on this drought situation.

### COZ022

#### Animas River Basin

01 0000MST 0 0 Wildfire  
1600MST

This fire was named the Well Fire and occurred 10 miles southeast of Redmesa in La Plata County. This fire began at the end of August and consumed 1,117 acres of pinyon pine, juniper, sage brush, and grass before being extinguished. The estimated cost of fighting the fire was 390 thousand dollars

### Dolores County

2 WNW Dove Creek to 01 1355MST 0 0 2K Dust Devil  
1 ESE Dove Creek 02 1405MST

A strong dust devil peeled a large section of corrugated metal roofing off a commercial building, as well as a section of the plywood underlayment. Packing material and insulation were blown hundreds of yards away from the building, while a 4 foot by 8 foot section of plywood landed on Highway 491.

### COZ002

#### Central Yampa River Basin

03 1200MST 0 0 Wildfire  
04 1600MST

This wildfire was named the Sheep Ranch Fire and occurred 6 miles east-northeast of Elk Springs in Moffat County. The fire consumed 100 acres of pinyon juniper, sage, and grass. Evacuations were put into effect for local residences.

### COZ004-009>010-012>013-018>019

Elkhead And Park Mountains - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - West Elk And Sawatch Mountains - Flattop Mountains - Northwestern San Juan Mountains - Southwestern San Juan Mountains

04 1155MST 0 0 Winter Weather/Mix  
05 0600MST

An unseasonably cold storm system brought the first accumulating snowfall of the season to the mountains of western Colorado. Snowfall amounts generally ranged from 2 to 6 inches. Local amounts up to 1 foot occurred across some of the mountains above 10,000 feet.

### COZ003

#### Roan And Tavaputs Plateaus

04 1300MST 0 0 Wildfire  
06 1600MST

This fire was named the Deer Park Fire and occurred 26 miles west of Debeque in Garfield County. The fire consumed 476 acres of ponderosa pine.

### COZ005-014

#### Upper Yampa River Basin - Upper Gunnison River Valley

15 0000MST 0 0 Frost/Freeze  
0900MST

Minimum temperatures ranged from the upper teens to the upper 20s.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## COLORADO, West

### **La Plata County** **12 N Bayfield**

**19 1110MST  
1500MST 0 0 Flash Flood**

Water and debris flowed around a foot deep across County Road 501, midway up the west side of Vallecito Reservoir. Some rock and mud slides were also reported in the area, as well as a few logs mixed in with the debris flows.

### **Routt County** **Steamboat Spgs**

**19 1130MST  
1140MST 0 0 40K Thunderstorm Wind (G53)**

Strong thunderstorm outflow winds totally destroyed a 12 foot by 60 foot Civil Air Patrol trailer at the airport. The trailer had rooms for office space, training, and briefing. A section of chain link fence at the airport was also destroyed when the trailer was blown through it. Numerous large trees were blown over or snapped off throughout the town, with at least one vehicle crushed and a mobile home damaged by falling trees.

### **Archuleta County** **1 W Arboles**

**19 1800MST  
2100MST 0 0 Heavy Rain**

Heavy rainfall resulted in minor flooding of many creeks and normally dry washes, with at least one creek over bankfull. The official cooperative weather observer near Arboles measure 1.73 inches of rain during this event.

### **Archuleta County** **20 E Pagosa Spgs**

**19 1815MST  
2100MST 0 0 Heavy Rain**

Minor flooding and debris flows were reported along the upper Blanco Basin Road and near Opal Lake.

### **La Plata County** **17 N Bayfield to 15 N Bayfield**

**20 0830MST  
1131MST 0 0 Heavy Rain**

Heavy rainfall caused Vallecito Creek to run bankfull for several hours which threatened 30 homes in the Mountain River Subdivision north of Vallecito Reservoir.

### **COZ003>005-009>010- 012>013-017>018 Roan And Tavaputs Plateaus - Elkhead And Park Mountains - Upper Yampa River Basin - Grand And Battlement Mesas - Gore And Elk Mountains/Central Mountain Valleys - West Elk And Sawatch Mountains - Flattop Mountains - Uncompahgre Plateau And Dallas Divide - Northwestern San Juan Mountains**

**20 1500MST 0 0 Winter Weather/Mix  
22 0500MST**

A cold early season storm produced widespread snowfall amounts from 3 to 5 inches across the mountains of western Colorado. High valleys in the Steamboat Springs area also received significant snowfall, with up to 8 inches in some locations. Local amounts from 10 to 12 inches fell across the central and northern mountains, with new snowfall up to 17 inches measured in the higher elevations of Routt County. Icy and snowpacked roads resulted in many accidents, including a tanker truck rollover on Rabbit Ears Pass where 15 inches of snow was measured.

### **COZ021>023**

**Four Corners / Upper Dolores River Basin - Animas River Basin - San Juan River Basin  
23 0600MST 0 0 Frost/Freeze  
0900MST**

### **COZ018**

Early morning low temperatures ranged from the mid 20s to 32 degrees across most lower elevation areas in southwest Colorado.

**Northwestern San Juan Mountains  
28 2100MST 0 0 Winter Weather/Mix  
29 0800MST**

2 to 5 inches of snow fell above the 9000 foot level in the northwest San Juan Mountains from this cold early season storm. Locally heavier amounts were reported, including 12 inches at Silverton.

## CONNECTICUT, Northeast

NONE REPORTED.

## CONNECTICUT, Northwest

### **CTZ013**

#### **Southern Litchfield**

**18 0812EST 0 0 Flood  
20 1930EST**

At 08:12 EST on 9/18/04, the Housatonic River was at its bankful and rising at Veterans Plaza, and the East Aspetuck River was over its banks at Wells Road in New Milford. The Housatonic River exceeded its flood stage of 11.0', cresting at 11.82' at 13:15 EST on 9/18/04 at the Stevenson Dam. The Housatonic River then exceeded its flood stage of 12.0', cresting at 13.33' at 19:45 EST on 9/19/04 at the Brookfield gage. Additional flooding was reported when the Housatonic River exceeded its flood stage of 7.0', cresting at 7.4' at 12:30 EST on 9/19/04 at the Falls Village gage.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## CONNECTICUT, Southern

### Fairfield County

#### Ridgefield

08

0850EST  
0905EST

0

0

Flash Flood

A spotter in Ridgefield reported that the rainfall rate was up to 1.9 inches per hour in torrential downpours. Many streets in Ridgefield experienced flash flooding.

### Fairfield County

#### Wilton

08

1000EST  
1030EST

0

0

Flash Flood

Torrential rains caused flash flooding of streets in Wilton.

The remnants of Hurricane Frances produced torrential rainfall across Western Connecticut on September 8th. Storm total rainfall amounts ranging from an inch to up to 6 inches were common across the area. This caused extensive flash flooding of mainly roads.

### Fairfield County

#### Stratford

18

0945EST  
1010EST

0

0

Flash Flood

Torrential rains caused flash flooding of roads.

### New Haven County

#### New Haven

18

1035EST  
1100EST

0

0

Flash Flood

Torrential rains caused flash flooding on I-95. Water was reportedly up to winshields on vehicles. Parts of the interstate were closed. Flash flooding also occurred in West Haven at the same time. Rescues had to be performed on people trapped in their vehicles.

The remnants of Hurricane Ivan produced torrential rains across Southern Connecticut. Storm total rainfall amounts added up to around 5 inches in spots. This caused extensive roadway flash flooding.

## DELAWARE

### Sussex County

#### Rehoboth Beach to Fenwick Is

03

0700EST  
0700EST

0

0

0

0

Rip Current

The combination of swells from Hurricane Frances and a high pressure system that built into New England and the Canadian Maritimes caused rip currents to occur throughout the Labor Day weekend. Bathing restrictions were in place throughout the weekend and water rescues were performed. No deaths were reported.

### New Castle County

#### North Portion

18

0916EST  
2053EST

0

0

Flash Flood

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall from around 9 a.m. EDT until around 2 p.m. EDT on the 18th. This caused poor drainage, creek and river flooding in the northern part of New Castle County. The Christina River at Coochs Bridge was above its 10.5 foot flood stage from 1016 a.m. EDT through 516 p.m. EDT on the 18th. It crested at 11.32 feet at 217 p.m. EDT. The White Clay Creek at Newark was above its 13 foot flood stage from 313 p.m. EDT through 953 p.m. EDT on the 18th. It crested at 13.58 feet at 532 p.m. EDT. The Red Clay Creek at Wooddale was above its 5.5 foot flood stage from Noon EDT through 7 p.m. EDT on the 18th. It crested at 7.05 feet at 245 p.m. EDT.

Storm totals included 2.54 inches at the New Castle County Airport, 2.17 inches in Newark and 1.99 inches in Bear.

### New Castle County

#### Countywide

28

1430EST  
1426EST

0

0

Flash Flood

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the afternoon and evening of the 28th. Doppler Radar storm total estimates ranged between 4 and 8 inches with the highest amounts toward the Pennsylvania border. Widespread poor drainage, stream and creek flooding occurred. Many roads were flooded and closed and numerous water rescues were performed. Evacuations occurred in Glenville along the Red Clay Creek. Forty people were also rescued from a bus that became stranded along the White Clay Creek.

The White Clay Creek at Newark was above its 13 foot flood stage from 447 p.m. EDT on the 28th through 911 a.m. EDT on the 29th. It crested at 13.59 feet at 930 p.m. EDT on the 28th. The Red Clay Creek at Wooddale was above its 5.5 foot flood stage from 4 p.m. EDT on the 28th through 7 a.m. EDT on the 29th. It crested at 13.53 feet at 1145 p.m. EDT on the 28th. As of October 1st, 2004 the flood stage of the creek at this site will be raised to 7.0 feet. Farther downstream the Red Clay Creek at Stanton was above its 15 foot flood stage from 434 p.m. EDT on the 28th through 901 a.m. EDT on the 29th. It crested at 23.44 feet at 130 a.m. EDT on the 29th. The Christina River at Coochs Bridge was above its 10.5 foot flood stage from 416 p.m. EDT on the 28th through 633 a.m. EDT on the 29th. It crested at 13.43 feet at 1147 p.m. EDT on the 28th. The Brandywine Creek at Wilmington was above its 11 foot flood stage from 1022 p.m. EDT on the 28th through 326 p.m. EDT on the 29th. It crested at 13.51 feet at 615 a.m. EDT on the 29th.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## DELAWARE

Storm totals included 8.01 inches in Newark, 7.31 inches in Bear, 5.79 inches at the New Castle County Airport, 5.40 inches in Christina Hundred, 4.69 inches in Wilmington and 2.63 inches in Blackbird Hundred.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **New Castle County**

<b>(Hlg)Wilmington Arprt to Elsmere Jct</b>	<b>28</b>	<b>1514EST 1524EST</b>	<b>5</b>	<b>150</b>	<b>0</b>	<b>0</b>	<b>500K</b>	<b>Tornado (F2)</b>
---	-----------	----------------------------	----------	------------	----------	----------	-------------	---------------------

An F2 (on the Fujita scale) tornado touched down in northern New Castle County with maximum winds estimated at 130 mph. The path length was 5.0 miles long with a maximum path width of 150 yards. The tornado touched down near and was observed at the New Castle County Airport. The northern end of the tornado track was in Elsmere. Significant damage did occur along the path of this tornado, particularly to some of the planes at the airport and industrial buildings near the airport. In addition, five persons were injured.

## DISTRICT OF COLUMBIA

NOT RECEIVED.

## **FLORIDA, East Central**

### **Osceola County**

<b>3 E St Cloud</b>	<b>04</b>	<b>1004EST</b>	<b>0.1</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>Tornado (F0)</b>
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An Osceola County Sheriff's vehicle was pushed off the road as an F0 tornado from a rain band in Hurricane Frances touched down briefly along Highway 192, just east of St. Cloud.

**FLZ041-047-054-059-064**

**Volusia - Brevard - Indian River - St. Lucie - Martin**

<b>04</b>	<b>1949EST</b>	<b>0</b>	<b>0</b>	<b>4.8B</b>	<b>93.2M</b>	<b>Hurricane/Typhoon</b>
<b>05</b>	<b>1949EST</b>					

The center of category 2 Hurricane Frances reached the Florida east coast near Sewall's Point in Martin County early on September 5th. Frances was moving to the west northwest at 7 mph and maintained hurricane strength as it crossed the east half of the Florida Peninsula. Frances was downgraded to a tropical storm in the afternoon on the 5th when it was about 50 miles east of Tampa Bay.

In Martin, St. Lucie and Indian River counties, the slow moving storm produced wind gusts to hurricane strength for about 19 hours, producing an estimated 4.5 billion dollars in damage. Wind gusts well over 100 mph destroyed coastal structures, marinas, and vessels. Farther inland, hundreds of homes, mobile homes, and businesses were destroyed, and thousands were damaged. Highest recorded winds for Martin county were 91 knots (105 mph) at Port St. Lucie Inlet. The highest wind gust in St. Lucie County, was 94 knots (108 mph) at Ft. Pierce and in Indian River County, 70 knots ( 81 mph) in Vero Beach.

Brevard and Volusia counties also recorded hours of hurricane force wind gusts from the north side of the storm. Thousands of homes and businesses were destroyed and damaged, with hundreds of thousands of residences with out power. Brevard was hit with an estimated damage of 90 million dollars. Damage in Volusia County was close to 240 million dollars. Most official NWS surface wind equipment failed prior to the max wind of the storm when power was knocked out. Highest recorded surface winds gust was 78 knots (90 mph) from Merritt Island Airport, although a wind tower at NASA report gusts to 82 knots (94 mph). These winds were likely representative of what most of the beach front areas were hit with. Daytona Beach International Airport recorded a wind gust to 65 knots (75 mph) prior to the power outage.

Lowest recorded pressures for Hurricane Frances were, 994.9 mb at Daytona Beach Airport, 995.9 mb at NWS Melbourne, 962.1 at St. Lucie Lock, and 964.7 at Port Mayaca Lock.

Beach erosion was moderate to severe from Cocoa Beach to Ft. Pierce, ranging from 5 to 6 feet from south Brevard County to up to 12 feet near Vero Beach where a large section of a beach road was washed out. A storm surge of 5.89 feet MSL was recorded at the St. Lucie Lock. A surge near 6 feet occurred near Cocoa Beach ranging to near 8 feet around Vero Beach where onshore winds were the strongest.

Radar estimates show as much as 13 inches of rain fell in Volusia County with a range of 6 to 10 inches of rain in the remaining counties. The worst flooding from Hurricane Frances was in Volusia, Seminole, Orange and Osceola counties. Significant inland flooding was reported in Martin, St. Lucie, Indian River and Brevard counties.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **FLORIDA, East Central**

### **FLZ044>046-053-058 Lake - Orange - Seminole - Osceola - Okeechobee**

<b>04</b>	<b>2255EST</b>	<b>0</b>	<b>0</b>	<b>23.5M</b>	<b>82.5M</b>	<b>High Wind (G61)</b>
<b>05</b>	<b>1351EST</b>					

The center of category 2 Hurricane Frances reached the Florida East near Sewall's point in Martin County early on September 5th but began spreading hurricane force wind gusts across most of Central Florida by 11 pm on September 4th. Frances entered Central Florida moving west northwest at 7 mph and maintained hurricane strength as it crossed the east half of the Florida Peninsula. Frances was downgraded to a tropical storm in the afternoon on the 5th when it was about 50 miles east of Tampa Bay.

In Okeechobee County, little direct observational wind data is available, but wind estimates from the Hurricane Research Division show sustained hurricane force winds over most of the county as Frances crossed the county from east to west. Almost 700 residences were destroyed, with damage to 22,688 residences.

Osceola County also suffered extensive wind damage to homes, mobile homes and businesses. Again, little wind data was available after the storm, but hurricane force wind gusts were estimated to have occurred over all of the county.

Lake, Orange and Seminole counties were also hit hard by the rain bands on the north side of Hurricane Frances. Extensive damage to residences, businesses and public buildings were reported across the counties. It is difficult to assess damage amounts since the areas was swept by Hurricane Jeanne a few weeks later. The Lake County damage estimate was over 6 million dollars. Orlando International Airport reported a gust to 60 kts (69 mph). Sanford reported a gust to 61 kts (70 mph), and a home weather station in Clermont reported a gust to 56 kts (64 mph). Widespread damage in all the counties suggests that the area was swept by hurricane force wind gusts. Significant damage was done to the area landscape industry around Apopka.

### **Indian River County**

#### **East Portion**

<b>04</b>	<b>2306EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>05</b>	<b>1200EST</b>			

From 4 to 8 inches of heavy rain from Hurricane Frances produced widespread flooding of roads, residences and businesses mainly in the coastal communities.

### **Martin County**

#### **East Portion**

<b>04</b>	<b>2306EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>05</b>	<b>1200EST</b>			

From 4 to 8 inches of heavy rain from Hurricane Frances produced widespread flooding of roads, residences and businesses mainly in the coastal communities.

### **St. Lucie County**

#### **East Portion**

<b>04</b>	<b>2306EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>05</b>	<b>1200EST</b>			

From 4 to 8 inches of heavy rain from Hurricane Frances produced widespread flooding of roads, residences and businesses mainly in the coastal communities.

### **Brevard County**

#### **Countywide**

<b>05</b>	<b>0130EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1200EST</b>			

From 4 to 8 inches of heavy rain from Hurricane Frances produced widespread flooding of roads, residences and businesses.

### **Lake County**

#### **Northeast Portion**

<b>05</b>	<b>0130EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1200EST</b>			

An estimated 8 to 10 inches of rain from Hurricane Frances fell across the central and northern part of Lake County, flooding roads and a few homes.

### **Okeechobee County**

#### **Northeast Portion**

<b>05</b>	<b>0130EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1200EST</b>			

From 4 to 6 inches of heavy rain from Hurricane Frances produced widespread flooding of roads, and residences.

### **Orange County**

#### **West Portion**

<b>05</b>	<b>0130EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1200EST</b>			

From 8 to 10 inches of rain from Hurricane Frances fell across north and west Orange County, flooding homes and roads in the Orlando metropolitan area.

### **Osceola County**

#### **North Portion**

<b>05</b>	<b>0130EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1300EST</b>			

From 8 to 10 inches of heavy rain from Hurricane Frances produced widespread flooding of roads, residences and businesses mainly in Kissimmee and St. Cloud.

### **Seminole County**

#### **Countywide**

<b>05</b>	<b>0130EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1200EST</b>			

From 8 to 10 inches of rain from Hurricane Frances fell across much of Seminole County, flooding homes and roads.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **FLORIDA, East Central**

### **Volusia County**

#### **Countywide**

**05 0130EST** **0 0** **Flash Flood**  
**1200EST**

From 10 to 12 inches of rain from the northern rainbands of Hurricane Frances produced widespread flooding of homes, businesses and roads across most of the coastal communities as well as in Deltona, and Deland.

**FLZ041-047-054-059-064**

#### **Volusia - Brevard - Indian River - St. Lucie - Martin**

**05 0400EST** **0 0** **Storm Surge**  
**1200EST**

Hurricane Frances made landfall at about high tide, after midnight on the 5th. The highest surges occurred south of Ft. Pierce Inlet. This was associated with the inner eye wall band as it was blowing normal to the coast. Surge levels ran from 3 to 4 feet from Cape Canaveral, north through Volusia County. Surge levels ran from near 6 feet south of Cape Canaveral to near 8 feet in Ft. Pierce. The surge was less over Martin County, although there was a strong longshore current and considerable beach erosion.

**FLZ041-044-046**

#### **Volusia - Lake - Seminole**

**09 0700EST** **0 0 4.8M** **Flood**  
**30 2359EST**

Hurricane Frances produced 6 to 10 inches of heavy rain over much of the middle and upper St. Johns River Basin. Beginning around September 9th, water levels began to reach flood stage on the middle basin mainly around Geneva, and Sanford. Levels continued to rise well above flood stage and began to fall slightly until Hurricane Jeanne followed the same track across the state. Significant flooding followed with a record crest of 10.1 feet being reached at the Lake Harney Gage. In Volusia County many roads and dozens of homes were flooded, mainly in the Stone Island and surrounding communities. In Seminole County near Geneva, roads, nurseries and homes along Lake Harney were flooded. Water came over the seawall in Sanford and flooded numerous structures along the south shore of Lake Monroe. In Lake County...a few buildings and roads were flooded near Astor. River levels remained above flood stage through the remainder of the month.

**FLZ041-047-054-059-064**

#### **Volusia - Brevard - Indian River - St. Lucie - Martin**

**25 0140EST** **0 0 379.9M 8.7M Hurricane/Typhoon**  
**26 0800EST**

The center of category 3 Hurricane Jeanne reached the Florida east coast near Sewall's Point in Martin County shortly after midnight on September 26th. Remarkably, this is in the same location where Hurricane Frances came ashore on September 5th. Jeanne was moving to the west northwest at 12 mph and maintained hurricane strength as it crossed most of the Florida Peninsula. Jeanne was downgraded to a tropical storm in the afternoon of September 26th when it was about 40 miles northeast of Tampa Bay.

In Volusia County, hurricane force wind gusts began with the rain bands on the north side of Jeanne as they moved on shore. The county, already battered by Hurricane Frances suffered extensive additional damage. Fresh water flooding from local heavy rain, and Flooding of the St. Johns River affected more than 200 residences and business properties. Total damage estimates were near \$60 million. Hurricane winds damaged or destroyed thousands of homes and businesses. Hundreds of thousands of residences were with out power. Most official NWS surface wind equipment failed prior to the max wind of the storm when power was knocked out. The highest recorded wind was only 55 knots (63 mph), but wind damage suggest numerous gusts in excess of hurricane strength. The lowest recorded pressure was 993.6 mb.

In Brevard County, the strongest winds swept across the coast south of Cape Canaveral and the southern coastal communities. Grant, Micco and the south part of Palm Bay were hit much harder than the northern locations. County wide damages were reported at \$320 million. Especially hard hit was the mobile home community of Barefoot Bay. A Palm Bay man drowned when his pickup truck ran off a road into a deep flooded ditch. Highest wind gusts in the county were, 79 knots (91 mph) at the NWS Melbourne office. Based on radar information, it is estimated that wind gusts over 100 kts (115 mph) swept across the southern coastal areas. The lowest recorded pressure for the storm was 986.8 mb at Melbourne. Total damage estimates for the county were near \$320 million.

Indian River County was hit hard by Jeanne being to the right of the land falling eye. 8,300 residences were damaged or destroyed and over 41,000 residences were damaged. Total wind damage for the county was over \$2 billion. Highest wind gusts in the county were, 106 knots (122 mph) at Vero Beach and 101 knots (116 mph) at Sebastian. The lowest recorded pressure for the county was 965.5 mb at Vero Beach.

The north part of the hurricane eye passed over St. Lucie County producing \$1.2 billion in wind damage. The marinas along Ft. Pierce inlet were hit destroying dozens of boats. A 34 year old man was electrocuted when his truck ran into a power line. Thousands of homes and business were damaged and destroyed by the wind. Especially hard hit were the dozens of mobile home communities. Highest wind gusts in the county were, 111 knots (128 mph) from a private residence just north of Ft. Pierce inlet. The lowest recorded pressure for the county was 952.9 mb at Ft. Pierce.

The eye of Hurricane Jeanne passed over the community of Sewell' Point in Martin County. Over 180 residences were destroyed with about 4000 residences either damaged or destroyed. The highest wind speed recorded was 91 kts (105 mph) in Jensen Beach. No pressure data was recorded for Martin County. Severe beach erosion occurred compounding the damage from Hurricane Frances

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## FLORIDA, East Central

just 3 weeks earlier.

### FLZ041-047-054-059-064 Volusia - Brevard - Indian River - St. Lucie - Martin

25	2200EST				0	0	8M		Storm Surge
26	1600EST								

The greatest storm tides occurred between Brevard and St. Lucie Counties, to the right of the landfalling eye wall. Initial estimates of storm tides range from 6 feet in Volusia County to around 10 feet in St. Lucie county, and about 8 feet in Martin County. Damage would have been greater except that Jeanne came ashore mainly during a low tide. At the next high tide strong wind and rain bands were still hitting Volusia County from the east. Hardest hit was the town of New Smyrna Beach where much of the sand east of the town's seawall was removed.

### Indian River County 2 W Vero Beach to 5 W Vero Beach

25	2204EST	0.5	30	0	0	20K		Tornado (F1)
----	---------	-----	----	---	---	-----	--	--------------

As the main eye wall of Hurricane Jeanne crossed the coast, an F1 strength tornado-like event moved through the northeast corner of the intersection of Interstate 95 and Highway 60, west of Vero Beach. In this area there was a path of blown down trees surrounded by trees with little damage. The size of the area was about .5 miles by 30 yards.

### Brevard County 1 N Micco

26	0130EST	0.3	20	0	0			Tornado (F1)
----	---------	-----	----	---	---	--	--	--------------

As the center of Hurricane Jeanne was coming on shore to the south, an F1 tornado-like event moved through the mobile home community of Barefoot Bay blowing down trees along a narrow well defined area surrounded by undamaged trees and mobile homes.

### Brevard County 1 N Micco

26	0151EST	0.5	50	0	0	350K		Tornado (F1)
----	---------	-----	----	---	---	------	--	--------------

As the center of Hurricane Jeanne was coming on shore to the south, an F1 tornado-like event moved through the mobile home community of Barefoot Bay, severely damaging about a dozen mobile homes. The damage path moved from east to west, skipping over the residences near the Intracoastal Waterway and damaging the ones on the west side of the community.

### FLZ044>046-053-058 Lake - Orange - Seminole - Osceola - Okeechobee

25	2300EST				1	0	70M	48.4M	Strong Wind
26	1400EST								

As the center of Hurricane Jeanne crossed Okeechobee County and moved into west Central Florida, wind gusts to near 80 mph crossed the county. No direct wind or pressure observations were available in the county from Jeanne. Winds gusting to hurricane force damaged and destroyed residences and mobile homes, damaged roofs and out buildings. Damage estimates were near \$10 million.

In Osceola County gusts to hurricane strength damaged and destroyed residences with an estimated \$11 million in damage. Agricultural damage, mainly to citrus, was \$8 million.

Orange County was also hit hard by the rain bands on the north side of Hurricane Jeanne. Extensive damage to residences, businesses and public buildings were reported across the county. Damage estimates were over \$40 million. The highest wind was 67 knots (76 mph) at Orlando International Airport. The lowest pressure was 985.1 mb also at Orlando International Airport.

Seminole County suffered around \$4 million in damage to residences, mobile homes, roofs pool enclosures fences and out buildings. Agriculture damage was near \$3.6 million to citrus and the nursery industry. Highest wind in the county was 60 knots (69 mph) at Sanford. The lowest pressure was 988.8 mb.

Lake County suffered around \$8 million in damage. Over 2800 residences were damaged, with 111 destroyed. A 91 year old woman died in a fire started by a candle. Agriculture damage was near \$8.2 million to citrus and the nursery industry. Highest wind in the county was 41 knots (47 mph) at Leesburg but estimated wind gusts of hurricane force extended over the south half of the county. The lowest recorded pressure was 982.1 at Leesburg.

F91PH

### Brevard County South Portion

26	0500EST				1	0			Flash Flood
	2300EST								

As the center of Hurricane Jeanne move on shore to the south of Brevard County continuous heavy tropical rain fell across central and southern Brevard County. Rainfall amounts of 6 to 8 inches flooded streets and roads over Palm Bay and surrounding areas. A Palm Bay man drowned when he drove his truck into a flooded ditch on the side of a road. M66VE

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## FLORIDA, East Central

### **Indian River County**

<b>Countywide</b>	<b>26</b>	<b>0800EST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
		<b>2200EST</b>							

As the center of Hurricane Jeanne move on shore to the south over Martin County, continuous heavy tropical rain fell across much of Indian River County. Rainfall amounts of 6 to 8 inches flooded streets and roads over Vero Beach and inland roadways.

### **Osceola County**

<b>Countywide</b>	<b>26</b>	<b>0800EST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
		<b>2200EST</b>							

As the center of Hurricane Jeanne move on shore to the south of, and then over Osceola County, continuous heavy tropical rain fell across central Osceola County. Rainfall amounts of 6 to 8 inches flooded streets and roads over communities along Highway 192 to near St. Cloud.

## FLORIDA, Extreme Southern

### **FLZ076>078**

#### **Monroe/Upper Keys - Monroe/Middle Keys - Monroe/Lower Keys**

<b>01</b>	<b>2200EST</b>	<b>0</b>	<b>0</b>	<b>20K</b>	<b>Hurricane/Typhoon</b>
<b>06</b>	<b>0400EST</b>				

As Hurricane Frances tracked from the northwest Bahamas through the central Florida peninsula, several outer rain bands crossed the Florida Keys producing short episodes of strong wind gusts. A peak wind gust of 81 knots (93 mph) was measured at the Sombrero Key Light C-MAN station, at an elevation of over 150 feet above mean sea level. Other notable wind gusts included 55 knots (63 mph) at Sand Key C-MAN and 59 knots (68 mph) at Molasses Reef C-MAN. Over land, peak wind gusts included 47 knots (54 mph) at the U.S. Coast Guard Group Key West, and 44 knots (51 mph) at the Key West Harbor. Stronger wind gusts were estimated along the south side of Marathon...near Flamingo Island...in the squall that produced the extreme winds at Sombrero Key Light. These winds tore screens in porches in isolated fashion from Big Pine Key through Grassy Key, and blew out plastic or vinyl panels of commercial signs in Marathon. Otherwise, damage was limited to downed tree limbs and minor power outages.

As Frances passed to the north, strong northwest and west winds drove waters higher than normal along the Florida Bay shoreline...up to 1.0 foot above normal at Vaca Key, and estimated to near 2.5 feet above normal along the bayside of North Key Largo and Jewfish Creek. These tides produced minor flooding of sidestreets and a parking lot near Mile Marker 106 of the Overseas Highway.

### **FLZ076>078**

#### **Monroe/Upper Keys - Monroe/Middle Keys - Monroe/Lower Keys**

<b>12</b>	<b>1000EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Hurricane/Typhoon</b>
<b>14</b>	<b>2200EST</b>				

Hurricane Ivan tracked through the central Gulf of Mexico after crossing the extreme western tip of Cuba. A few outer rain bands affected the Lower Keys on September 14, producing wind gusts to 46 knots (53 mph) at Key West International Airport, and to 42 knots (48 mph) at the Sand Key C-MAN station. Storm tides were estimated at 1 foot above normal...which in concert with higher-than-usual astronomical tides produced water levels up to 2 feet above normal. These values were similar to what was achieved during Hurricane Charley. Wind damage was limited to downed tree limbs in the Keys between the Seven Mile Bridge and Key West. With two previous tropical cyclone events, the measured winds were not enough to produce additional significant tree damage.

Most significant was the mandatory evacuation order of all Keys residents and visitors beginning on September 9. Newspapers reported up to 50 percent of all Monroe County residents evacuated the islands. The prolonged labor shortages and discontinuation of delivered goods from September 9 through September 12 caused widespread fuel and food shortages at commercial establishments.

### **FLZ076>078**

#### **Monroe/Upper Keys - Monroe/Middle Keys - Monroe/Lower Keys**

<b>24</b>	<b>1600EST</b>	<b>0</b>	<b>0</b>	<b>5K</b>	<b>Hurricane/Typhoon</b>
<b>26</b>	<b>0400EST</b>				

Hurricane Jeanne passed from the northwest Bahamas through the central Florida peninsula. Unlike with Hurricane Frances, Jeanne did not spread widespread convective bands through the island chain. Rainfall was limited to the outer edge of the stratiform rain shield...which clipped the Upper Keys and Florida Bay. Peak wind gusts included 44 knots (51 mph) at Sombrero Key Light C-MAN station, and 43 knots (49 mph) at Molasses Reef C-MAN station. Storm tides were once again measured at 1.0 feet above normal at Vaca Key, and estimated at 2.5 feet above normal in far eastern Florida Bay near North Key Largo and Jewfish Creek. Tidal flooding inundated a parking lot at the Jewfish Creek bridge, similar to what was experience with Hurricane Frances. Spring tides in combination with the elevated Florida Bay waters caused some shallow tidal flooding of airport grounds at Key West International Airport, as the interior tidal salt ponds rose. Westerly winds prevented wave action from overwashing low-lying coastal roads, however.

A voluntary evacuation of mobile homes and special needs residents was recommended by Monroe County Emergency Management, with two shelters opened.

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					Killed	Injured	Property	Crops	

## FLORIDA, Northeastern

**FLZ020>025-030>033-035>038-040** **Hamilton - Suwannee - Columbia - Baker - Nassau - Duval - Union - Bradford - Clay - St. Johns - Gilchrist - Alachua - Putnam - Flagler - Marion**

<b>04</b>	<b>2100EST</b>				<b>3</b>	<b>0</b>			<b>Tropical Storm</b>
<b>07</b>	<b>2359EST</b>								

Hurricane "Frances"

Hurricane "Frances" made landfall along the central Florida coast and, as a weakening system, moved west-northwest across central Florida and then northwestwards into southwest Georgia. This motion brought the area into the periphery of the storm and north Florida experienced sustained tropical storm force winds with gusts to near hurricane force. Across the Suwannee Valley heavy rainfall resulted in extensive flooding in many locations.

The lowest north Florida Mean Sea Level Pressure (MSLP) of 987.8/29.16 in Hg was recorded in Ocala as the center moved to the southwest of the city. The lowest MSLP readings across north Florida ranged from 987.8/29.16 in HG at Ocala Airport (KOCF) to 1002.7 mb/29.61 in Hg at the National Ocean Systems (NOS) Tide Gage in Fernandina Beach, Florida.

Maximum sustained winds recorded were 56 knots/64 mph at the St. Augustine CMAN site (SAUF1) at the St. Augustine Pier. The peak gust was also recorded at SAUF1 with 71 knots/82 mph reported on the evening of the 5th. Generally inland stations (ASOS, AWOS III and mesonet stations) reported sustained winds of 30 to 50 mph with gusts of 40 to 65 mph. Extensive tree blow down occurred in bands with roof and some structural damage. Most structural damage was associated with mobile homes and generally weakly constructed permanent structures. Several cases of large trees destroying manufactured homes were observed, especially across Clay, Flagler, Putnam and St. Johns Counties.

Wave heights of 10 to 20 feet were recorded across the coastal waters with tides running one to two feet above astronomical tide levels. Extensive beach erosion occurred due to long duration of onshore winds due both to "Frances" and a period of onshore flow preceding the event.

Rainfall totals across north Florida generally ranged from 5 to 15 inches. The heaviest rainfall was associated with a rainband which moved out of Apalachee Bay across north Florida and the Suwannee Valley. This band dropped between 10 and 16 inches of rain from near Ocala through the Suwannee Valley. Peak Rainfall reports with this band are 15.84 inches in High Springs, Florida; 14.84 at Lake Butler, Florida; and 13.63 inches at Orange Springs, Florida. Extensive sheet flooding, river flooding and road washouts occurred with this band. Numerous homes were flooded across the entire region with the Trenton and Lake City areas especially hard hit. Most rivers in the region were pushed to flood stage with several approaching record flood. Portions of Interstate 10 were closed due to flooding.

Tornadoes occurred across the region with over 20 confirmed touchdowns. The banded nature of the Tropical Storm wind damage made it very difficult to differentiate between wind damage and tornado damage in subsequent storm damage surveys. No fatalities or injuries occurred due to tornado touchdowns.

Overall extensive tree blow down, power outages and roadways blocked by trees were reported in all areas. In the heavy rainfall areas many dirt and secondary roads were left impassable for up to a week.

Fatalities all occurred in Alachua County, Florida. 09/05/04, 1100 EST a 28 year old male lost control of his vehicle while northbound on Interstate 75 near Micanopy. The Vehicle hydroplaned and skidded into a wooded area wrapping the vehicle around trees. KGNV observation at 1100 EST, winds 050 degrees 24 mph (21 knots) with gusts to 43 mph (37 knots). Visibility was 7 miles in light rain. 09/05/04, 1815 EST A 61 year old woman was killed when a tree toppled onto her mobile home. 4 persons were in the home when the tree fell. Alachua County Emergency Management received the report at 1819 EST. KGNV observation at 1909 EST, winds 060 degrees 37 mph (32 knots) with gusts to 47 mph (41 knots). 09/06/04 1825 EST, An 86 year old woman died in a house fire related to the storm. Due to power outages she was using candles for lighting, fell asleep and the smoldering candles ignited a fire in her home killing her.

M21VE, F61MH, F86PH

**St. Johns County**  
**5 E Fruit Cove to**  
**Fruit Cove**

<b>05</b>	<b>0405EST</b>	<b>5</b>	<b>.2</b>	<b>0</b>	<b>0</b>	<b>15K</b>	<b>Tornado (F0)</b>
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Hurricane "Frances"

F0 tornado damage was observed along Race Track Road. St. Johns EMA assisted with storm damage assessment.

**Marion County**  
**Citra**

<b>05</b>	<b>0505EST</b>	<b>1</b>	<b>.2</b>	<b>0</b>	<b>0</b>	<b>Tornado (F0)</b>
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Hurricane "Frances"

0605 EDT

Possible tornado reported by EMA in Citra. Roof damage occurred.

0610 EDT

General public reported a possible tornado and roof damage on NE 168th Street in Citra.



## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>FLORIDA, Northeastern</u></b>									
<b>Clay County</b>									
<b>Orange Park</b>	<b>05</b>	<b>0710EST</b>	<b>1</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
	Hurricane "Frances" Trained spotter reported a tornado in Orange Park. Widespread damage occurred to trees and the power went out.								
<b>Flagler County</b>									
<b>Mantanzas</b>	<b>05</b>	<b>0820EST</b>	<b>0.5</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
	Hurricane "Frances" F0 tornado damage to homes along Bud Hallow Drive and Burnell Place in Matanzas Woods.								
<b>St. Johns County</b>									
<b>8 SSW Dupont Centre</b>	<b>05</b>	<b>0825EST</b>	<b>3</b>	<b>.2</b>	<b>0</b>	<b>0</b>	<b>80K</b>		<b>Tornado (F0)</b>
	Hurricane "Frances" F0 tornado damage to homes along highway 13 vicinity in Flagler Estates in southern St. Johns county. St. Johns EMA assisted with damage assessment.								
<b>Suwannee County</b>									
<b>Wellborn</b>	<b>05</b>	<b>1330EST</b>	<b>0.5</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
	Hurricane "Frances" NWS employee reported F0 tornado damage along interstate 10 near the exit for Wellborn. Trees were snapped on both sides of the road.								
<b>Putnam County</b>									
<b>Crescent City</b>	<b>05</b>	<b>1413EST</b>	<b>0.5</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
	Hurricane "Frances" Tornado touchdown reported by police officers in Crescent City. Property and tree damage was reported but a dollar estimate was not given.								
<b>St. Johns County</b>									
<b>2 N Bakersville</b>	<b>05</b>	<b>1715EST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
	Hurricane "Frances" Funnel cloud in Mill Creek area.								
<b>Putnam County</b>									
<b>4 W Palatka to Interlachen</b>	<b>05</b>	<b>1750EST</b>	<b>10</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
	Hurricane "Frances" 0630 EDT: Tornado picked up trampoline 4 miles west of Palatka. 0650 EDT: EMA reported a tornado on the ground near Interlachen.								
<b>Alachua County</b>									
<b>High Spgs</b>	<b>05</b>	<b>1800EST</b>	<b>5</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
	Hurricane "Frances" Large trees were down in a lawn and others were snapped off across the road several hundred feet down highway 236 just outside of High Springs.								
<b>St. Johns County</b>									
<b>Durbin</b>	<b>06</b>	<b>0115EST</b>	<b>1</b>	<b>.2</b>	<b>0</b>	<b>0</b>	<b>60K</b>		<b>Tornado (F0)</b>
	Hurricane "Frances" F0 tornado damage to homes near State Road 13 North between Roberts Road and Greenbriar Road. Dollar damage estimate from St. Johns County EMA.								
<b>Clay County</b>									
<b>Green Cove Spgs</b>	<b>06</b>	<b>1745EST</b>	<b>0.5</b>	<b>.2</b>	<b>0</b>	<b>0</b>			<b>Tornado (F1)</b>
	Hurricane "Frances" NWS Storm Survey found 7 power boats, 6 sailboats and 1 houseboat destroyed and sunk by a F1 tornado. A 32 ft. boat was picked up and put on top of a houseboat on the other side of the pier. The tornado crossed Black Creek and entered the woods across U.S. highway 17 and damaged trees.								

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<b><u>FLORIDA, Northeastern</u></b>									
<b>Putnam County</b>									
Palatka	06	1755EST 1756EST			0	0		Funnel Cloud	
Hurricane "Frances"									
1855 EDT reported by Law Enforcement:									
Funnel cloud east of State Road 19 near Palatka.									
1856 EDT reported by Fire Dept/Rescue:									
Funnel cloud in western Palatka.									
<b>St. Johns County</b>									
Fruit Cove	06	1810EST	1	.2	0	0	5K	Tornado (F0)	
Hurricane "Frances"									
F0 tornado damage along Highway 16A southeast Fruit Cove. Dollar damage estimate from St. Johns EMA.									
<b>St. Johns County</b>									
Fruit Cove	06	1820EST	1	.2	0	0	20K	Tornado (F0)	
Hurricane "Frances"									
F0 tornado damage in Fruit Cove near Shands Bridge. Dollar damage estimate from St. Johns EMA.									
<b>Union County</b>									
5 N Raiford	07	0700EST			0	0		Funnel Cloud	
Hurricane "Frances"									
2 separate public reports of funnel clouds reported by Union County Emergency Management to State Warning Point in northern Union county. Storms moving NE toward Bradford County.									
<b>Marion County</b>									
Candler	07	0900EST	0.5	.2	0	0		Tornado (F0)	
Hurricane "Frances"									
Trained spotter reported a tornado on the ground near Candler Hills Golf Course. No damage was reported.									
<b>Duval County</b>									
5 E Jacksonville Intl Ap	07	0940EST			0	0		Funnel Cloud	
Hurricane "Frances"									
Occasional funnel clouds seen 5 miles east of the Jacksonville International Airport.									
<b>Putnam County</b>									
Interlachen	07	0945EST	0.5	.2	0	0		Tornado (F0)	
Hurricane "Frances"									
Public report of tornado and tree damage in Interlachen.									
<b>St. Johns County</b>									
Durbin	07	1055EST			0	0		Funnel Cloud	
Hurricane "Frances."									
<b>St. Johns County</b>									
Durbin	07	1100EST	0.5	.2	0	0		Tornado (F0)	
Hurricane "Frances"									
Public report of a tornado and shingles blown off of a roof.									
<b>Duval County</b>									
Arlington	07	1235EST	1	1	0	0		Tornado (F0)	
Hurricane "Frances"									
F0 tornado damage extended from Fulton Road and Fort Caroline, across Chaz Benett to the end of Bluff Avenue. A large oak tree was down on a home, another down on a car and two other oak trees greater than 12 inches in diameter were snapped off about 25 feet in the air. People in the area reported a roaring noise around the time of the damage.									
<b>St. Johns County</b>									
2 W St Augustine	07	1240EST	0.5	.2	0	0	50K	Tornado (F0)	
Hurricane "Frances"									
NWS storm survey and St. John's County EMA determined that a F0 tornado caused damage to homes just east of interstate 95 and south of state road 16. The location is just a couple miles west of St. Augustine city limits.									
<b>St. Johns County</b>									
St Augustine	07	1300EST			0	0		Hail (1.00)	

## Storm Data and Unusual Weather Phenomena

Time Loss/ Length	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b>FLORIDA, Northeastern</b>									
<b>Alachua County</b>									
<b>Hawthorne</b>	<b>07</b>	<b>1539EST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
		Hurricane "Frances" Funnel clouds 8-10 miles north of Hawthorne near U.S. 301 moving east.							
<b>Duval County</b>									
<b>Neptune Beach</b>	<b>07</b>	<b>1850EST</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>			<b>Tornado (F0)</b>
		Hurricane "Frances" Three homes were damaged by large oak trees and 15-20 oaks were down west of Penman and Florida Boulevards.							
<b>FLZ022</b>		<b>Columbia</b>							
	<b>08</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		<b>1130EST</b>							
		Extensive flooding was occurring in Lake City due to sheet flow. Numerous roads including Interstate 10 were flooded. Some roads were under 20 feet of water, and the weight of the water was pushing air out of the aquifer.							
<b>FLZ024</b>		<b>Nassau</b>							
	<b>08</b>	<b>0805EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		Numerous roads were closed due to flooding across the county, including bypass roads in Callahan, Griffin Road in Callahan and Old Dixie Highway in Callahan.							
<b>FLZ024</b>		<b>Nassau</b>							
	<b>09</b>	<b>0800EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		7 NW of Hilliard Home in Bolougne along the St. Marys River has 3 inches of water in the garage.							
<b>FLZ021</b>		<b>Suwannee</b>							
	<b>09</b>	<b>1100EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		15 to 20 roads remain closed countywide due to flooding.							
<b>FLZ022</b>		<b>Columbia</b>							
	<b>09</b>	<b>1100EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		Widespread flooding continues countywide. Numerous roads and bridges are washed out. Rose Creek has risen over bankfull.							
<b>FLZ035</b>		<b>Gilchrist</b>							
	<b>09</b>	<b>1100EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		Several houses flooded by 2 to 3 feet of water in Trenton. Several highways north of Trenton remain under water and are closed.							
<b>FLZ030</b>		<b>Union</b>							
	<b>09</b>	<b>1300EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		Numerous roads remain underwater countywide. County Rd. 18 East bridge at New River is closed due to high water.							
<b>Columbia County</b>									
<b>Lake City</b>	<b>09</b>	<b>2000EST</b>			<b>0</b>	<b>0</b>			<b>Heavy Rain</b>
		Local broadcast media relayed a public report of 2.3 inches of rainfall occurred in 20 minutes from ~1830-1850 EDT in Lake City.							
<b>St. Johns County</b>									
<b>St Augustine</b>	<b>10</b>	<b>1500EST</b>			<b>0</b>	<b>1</b>			<b>Rip Current</b>
		*** 1 Fatality *** 51 year old male drowned in a rip current.							
<b>Marion County</b>									
<b>Dunnellon to 4 NNE Dunnellon</b>	<b>15</b>	<b>2045EST</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>			<b>Tornado (F1)</b>
		Hurricane "Ivan" outer rainband. 2145 EDT: Report of one home destroyed on SW 93rd road in Dunnellon. Storm Survey indicated F1 strength. 2145 EDT: General Public reported trees down and roof material in road in Rainbow Springs.							
<b>Duval County</b>									
<b>1 S Mayport</b>	<b>24</b>	<b>1755EST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
		Naval Base Mayport observed a funnel cloud.							

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## FLORIDA, Northeastern

**FLZ020>025-030>033-035>038-040** **Hamilton - Suwannee - Columbia - Baker - Nassau - Duval - Union - Bradford - Clay - St. Johns - Gilchrist - Alachua - Putnam - Flagler - Marion**

25	1200EST	1	0	Tropical Storm
27	1800EST			

Hurricane "Jeanne"

Hurricane "Jeanne" made landfall along the central Florida east coast, very near the location of Hurricane "Frances" some two weeks earlier. Like "Frances" this system moved west-northwest across central Florida and then northwestwards into southern Georgia. This motion once again brought the area into the periphery of the storm as north Florida and southeast Georgia experienced sustained tropical storm force winds with gusts to near hurricane force along the coast. Across the Suwannee Valley and portions of southeast Georgia sustained winds were higher than during "Frances" and rain once again resulted in flooding of many locations.

The lowest local barometric pressure of 980.0 mb/28.94 in Hg was recorded in Ocala, Florida as the center moved to near the city. The lowest pressure readings across north Florida ranged from 980.0/28.94 in HG at Ocala Airport (KOCF) to 999.4 mb/29.51 in Hg at the National Ocean Systems (NOS) Tide Gage in Fernandina Beach, Florida. The lowest pressure readings across southeast Georgia ranged from 993.9 mb/29.35 in Hg at Douglas airport (KDQH) to 1001.4 mb/29.57 in Hg at Brunswick, Glynnco Airport (KBQK).

Maximum sustained winds recorded were 48 knots/55 mph at the St. Augustine CMAN site (SAUF1) on the St. Augustine Pier. The peak gust was also recorded at SAUF1 with 65 knots/75 mph occurring on the 26th. Generally land stations (ASOS, AWOS III and mesonet stations) reported sustained winds of 30 to 50 mph with gusts of 40 to 60 mph. Tree blow down once again occurred in bands with roof and some structural damage with the most pronounced damage over the Suwannee Valley and southeast Georgia where "Frances" was not quite as severe. Most structural damage was associated with mobile homes and generally weakly constructed permanent structures. Several cases of large trees destroying manufactured homes were once again observed. One child was killed due to a tree fall.

Wave heights of 20 feet were recorded across the coastal waters with tides running one to two and a half feet above astronomical tide levels on the open ocean. Tides three to four feet above astronomical occurred on the St. Johns River causing flooding in low lying areas. Extensive beach erosion once again occurred due to long duration of onshore winds both from "Jeanne" as well as a period of onshore flow preceding the event.

Rainfall totals across north Florida and southeast Georgia generally ranged from 3 to 7 inches. The heaviest rainfall was once again over the Suwannee Valley and southeast Georgia with Live Oak, Florida experiencing 10.88 inches of rain. Due to the already saturated conditions, sheet flooding, river flooding and road washouts again occurred with this event with Live Oak and southeast Georgia hard hit. Most rivers in the region returned to to flood stage and portions of Interstate 10 were again closed due to flooding.

Tornadoes occurred across the coastal region; however, the tornado outbreak was not as extensive as with "Frances." The banded nature of the Tropical Storm wind damage again made it very difficult to differentiate between wind damage and tornado damage in subsequent storm damage surveys. No fatalities or injuries are believed to have occurred due to tornado touchdowns.

Overall tree blow down, power outages and roadways blocked by trees were reported in most areas. In the heavy rainfall areas many dirt and secondary roads were once again left impassable.

M15OU

## Flagler County Flagler Beach

25	2330EST	1	1	0	0	Tornado (F0)
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Hurricane "Jeanne"

An F0 tornado ripped communications antennas from the roof of Aliki Tower Condominiums in Flagler Beach.

## FLZ033

### St. Johns

26	0000EST	0	0	Heavy Surf/High Surf
28	2359EST			

Significant beach erosion occurred along the St. Johns county coastline. Many places had 14-20 feet of shoreline lost and some areas had up to 30 feet of shorelines lost.

## Flagler County Codys Corner to 21 NW Codys Corner

26	1105EST	21	1	0	0	Tornado (F0)
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Hurricane "Jeanne"

Trees and powerlines were down along a path from Cody's Corner toward the Flagler and St. Johns County line, south of Hastings. Florida Power and Light damage maps and an aerial storm survey were used to determine the damage path.

## St. Johns County 8 W Crescent Beach to 2 S Dupont Centre

26	1355EST	2	1	0	0	Tornado (F0)
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# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **FLORIDA, Northeastern**

1455 EDT: A 911 operator relayed a public report of a tornado touchdown near U.S. 1 South, about a mile and a half south of State Road 206. Numerous trees and powerlines were blown down, and damage occurred to at least one home in the area.

1500 EDT: County EM reported up to 5 mobile homes were damaged, including ones located at 7616 and 7625 U.S. 1 South. Numerous trees and powerlines were down in the area as well.

### **Nassau County American Beach**

26 1548EST 0 0 Funnel Cloud

Hurricane "Jeanne"

A funnel cloud was moving onshore near American Beach. Reported by Nancy Freeman (Nassau EM).

### **FLZ025**

#### **Duval**

26 1733EST 0 0 Flood

At 1833 EDT, the public reported flooding at 105 and Blanding Blvd in the Ortega area. Ocean waters were also coming inland through beach access areas at this time.

### **St. Johns County Fruit Cove**

26 1815EST 1 1 0 0 Tornado (F0)

Hurricane "Jeanne"

Residential damage occurred in extreme NW St. Johns county from an F0 tornado. St. Johns EMA damage reports and logs, as well as a storm survey were used to determine it was indeed tornado damage.

### **St. Johns County Palm Vly**

26 1830EST 2 1 0 0 Tornado (F0)

Hurricane "Jeanne"

Residential damage occurred on Burnham Circle and Timberlake Point in northeast St. Johns county. St. Johns EMA damage reports and logs were used to diagnose that is was indeed tornadic damage.

### **St. Johns County Bakersville**

26 1910EST 2 1 0 0 Tornado (F0)

Hurricane "Jeanne"

F0 tornado damage occurred along County Road 13 N in St. Johns County. St. Johns EMA damage reports and logs were used to determine that the damage was from a tornado.

### **FLZ022**

#### **Columbia**

28 1200EST 0 0 Flood

NWS Storm Survey revealed widespread flooding throughout the county. Several homes were flooded from rising waters of the Sante Fe and Suwannee rivers due to tropical rainfall from Jeanne.

## **FLORIDA, Northwest**

### **FLZ010>012-014>019-026>029-034**

#### **Washington - Jackson - Bay - Gulf - Franklin - Gadsden - Leon - Jefferson - Madison - Liberty - Wakulla - Taylor - Lafayette - Dixie**

05 1400EST 0 0 1.7M Tropical Storm  
06 2300EST

Hurricane Frances came ashore on the east coast of Florida near Sewall's Point during the early morning hours of September 5. Frances weakened as it crossed the central peninsula, and reemerged over the northeast Gulf of Mexico 24 hours later as a tropical storm. Frances made its second landfall near St. Marks, FL, around mid-afternoon on September 6. A maximum sustained wind of 53 knots was recorded at the USAF C-Tower, 20 miles southeast of Apalachicola, FL. A peak wind gust of 63 knots was recorded at Buoy 42036, 80 miles southeast of Apalachicola. The lowest sea-level pressure was 984.4 mb at Tallahassee, FL. Rainfall from Frances ranged from a half inch at Panama City, FL, to 4.5 inches at Madison, FL. Storm tides along the northeast Gulf coast ranged from three to five feet. There were widespread reports of downed trees and power lines in the Florida Big Bend, with more scattered reports in the Florida Panhandle. Several homes were damaged by fallen trees. An estimated 70,000 customers were without power. 90 percent of Jefferson County was powerless for four days. A state of emergency was declared for the affected areas.

### **FLZ007>019-026>029-034**

#### **Inland Walton - Coastal Walton - Holmes - Washington - Jackson - Bay - Calhoun - Gulf - Franklin - Gadsden - Leon - Jefferson - Madison - Liberty - Wakulla - Taylor - Lafayette - Dixie**

15 0000EST 6 16 90.4M Hurricane/Typhoon  
16 2100EST

Hurricane Ivan made landfall near Gulf Shores, AL, during the predawn hours of September 16. Maximum sustained winds reached 50 knots, with gusts to 62 knots at Buoy 42039, 80 miles south of Panama City, FL. The lowest sea-level pressure was 999.6 mb at Panama City. Rainfall totals ranged from 9.26 inches at Mossy Head, FL, to 0.15 inches at Cross City, FL. Storm tides along the Gulf coast varied from ten feet in Bay and Walton counties to four feet in Taylor and Dixie counties. Large swells from Ivan began to affect the Gulf coast from the St. Joseph Peninsula to the Suwannee River on September 14. Storm surges continued for several hours after landfall. Beach erosion varied from extreme (20 to 40 feet) in Walton County to minor at St. George Island. Minor areal flooding affected much of the Florida Panhandle, including Walton, Bay, Holmes, Calhoun, Jackson and Gulf counties. Sharp rises to near or slightly above minor flood levels occurred on the Choctawhatchee River at Caryville, the

## Storm Data and Unusual Weather Phenomena

Time Loss/ Length	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
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## **FLORIDA, Northwest**

Apalachicola River at Blountstown, and the Shoal River at Mossy Head. An estimated 165,000 customers were without power. There were widespread reports of downed trees and power lines. The hardest hit areas were Gulf, Bay, and Walton counties, where more than 50 percent of homes and businesses were damaged or destroyed. Numerous roads in the Panhandle coastal counties were flooded or washed out. Intense outer rain bands from Ivan spawned numerous tornadoes over portions of the Florida Panhandle and Big Bend. The hardest hit counties were Bay, Calhoun, and Jackson counties, which accounted for six deaths and 16 injuries. Mandatory evacuations of low lying, coastal, and mobile home residents was ordered by officials in Bay, Walton, Jackson, Holmes, Jackson, Franklin, and Taylor counties. A state of emergency and presidential request for federal assistance were declared for the affected counties. F77PH, M84BU, M55PH, F35PH, M41PH, F37PH

## Gulf County

**Beacon Hill to  
3 NW Beacon Hill**

15	1535EST 1537EST	3	100	0	0	25K	Tornado (F0)
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A tornado touched down in Beacon Hill. Minor damage to a few homes, as well as downed trees and power lines occurred along its path. Reported by the Gulf County EMA.

## Bay County

7 SW Panama City to  
4 W Panama City

15	1540EST 1550EST	5	200	1	7	5M	Tornado (F1)
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A strong F1 tornado touched down near the St Andrews recreation area. It damaged dozens of restaurants, stores and shops as it moved north along Thomas Drive. Seven persons were injured at a seafood restaurant near Grand Lagoon. An elderly man was killed when the tornado destroyed a real estate office. The tornado moved across St Andrews Bay near the Hathaway Bridge and then 100 yards south of the WJHG-TV station before dissipating. Reported by the Bay County EMA and WJHG-TV meteorologist.

## Bay County

### 5 SE Allanton to Allanton

15	1543EST 1552EST	5	200	1	1	500K	Tornado (F1)
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A wood-frame house was lifted 60 feet off its foundation and thrown into a field. Of the seven family members inside, one was killed and another injured. Several other homes were damaged. Reported by a HAM radio operator. F77PH

## Bay County

**2 SE Calloway to  
Cedar Grove**

15	1600EST 1607EST	6	200	0	0	2M	Tornado (F1)
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A tornado touched down just southeast of Calloway and lifted just north of Panama City. It destroyed several homes in Calloway, Parker and Cedar Grove, and downed numerous trees and power lines. Reported by a HAM radio operator and the Bay County EMA.

## Bay County

**3 SE Youngstown to  
4 NW Youngstown**

15	1820EST 1828EST	7	75	0	0	15K	Tornado (F0)
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A tornado toppled numerous trees and power lines along its path. Reported by a HAM radio operator.

Washington County

**2 NE Gilberts Mill to  
2 NW Chipley**

15	1937EST 1952EST	12	75	0	0	50K	Tornado (F0)
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A tornado caused minor damage to several homes, and downed trees and power lines. Reported by the Washington County EMA.

**Holmes County**

5 NE Bonifay to  
6 N Bonifay

15	1955EST 2000EST	4	100	0	0	250K	Tornado (F1)
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A tornado destroyed one home and damaged several others. Scattered trees and power lines were down. Reported by the Holmes County EMA.

FLZ008-012-014

## Coastal Walton - Bay - Gulf

<b>15</b>	<b>1900EST</b>	<b>0</b>	<b>0</b>	<b>9M</b>	<b>Storm Surge</b>
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**16 0600EST**  
Storm surges of eight to ten feet caused extreme beach erosion along the coast. Many beach structures were damaged or undermined, and many sand dunes were lost. Reported by the Walton County EMA.

## Franklin County

**5 NW Carrabelle to  
10 NW Carrabelle**

15	2015EST 2020EST	5	100	0	0	10K	Tornado (F0)
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A tornado uprooted numerous trees along its path between Carrabelle and Morgan Place. Reported by the Franklin County EMA.

Liberty County

10 SE Wilma to  
5 NE Wilma

15	2030EST 2040EST	10	200	0	0	100K	Tornado (F1)
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A tornado uprooted hundreds of trees along its path through the Apalachicola National Forest. Reported by the Liberty County EMA.

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## FLORIDA, Northwest

### **Calhoun County**

**4 N Blountstown to  
1 E Altha**      **15**      **2107EST  
2118EST**      **7**      **600**      **4**      **5**      **2.5M**      **Tornado (F2)**

The supercell thunderstorm which spawned tornadoes in Franklin and Liberty counties, produced a strong F2 tornado, which touched down just southeast of Van Lierop Road, a few miles east of Highway 69. It crossed Highway 69 near the Stafford Creek Bridge, and peeled roofs from dozens of homes, uprooted trees, and scattered debris. The tornado then struck the Macedonia Community at Highway 69-A and Parrish Lake Road. It demolished three trailers and damaged 30 homes. The tornado picked up two neighboring mobile homes. One was thrown across a road and killed its two occupants. Another was slammed into a neighbor's house, which killed its two occupants and injured five others. Reported by the Calhoun County EMA.  
M55PH, F35PH, M41PH, F37PH

### **Jackson County**

**6 SE Marianna to  
6 N Marianna**      **15**      **2131EST  
2150EST**      **8**      **500**      **0**      **3**      **3M**      **Tornado (F2)**

A strong F2 tornado touched down about four miles west of Cypress. It damaged 10 mobile homes and destroyed 25 others in the Gold Drive Trailer Park. Three occupants were injured. The tornado moved northwest and damaged 10 mobile homes in the Brogdon Lane Trailer Park on U.S. Highway 90 just east of Marianna. It caused significant damage to the Federal Correctional Institution and destroyed eight vehicles. Before lifting, the tornado destroyed the Sykes Enterprise facility and some vehicles near the Marianna Municipal Airport. Reported by the Jackson County EMA.

### **Jefferson County**

**4 NE Lloyd to  
5 N Lloyd**      **16**      **0445EST  
0447EST**      **2**      **75**      **0**      **0**      **25K**      **Tornado (F0)**

A weak tornado touched down just south of Lake Miccosukee. It caused minor damage to a home, and downed numerous trees and power lines along its northwestward track toward northeast Leon County. Reported by a NWS employee and the Jefferson County EMA.

### **Leon County**

**4.5 SE Miccosukee to  
3 S Miccosukee**      **16**      **0447EST  
0450EST**      **3.5**      **75**      **0**      **0**      **25K**      **Tornado (F0)**

The weak tornado moved from northwest Jefferson County into adjacent northeast Leon County. It destroyed a shed and caused minor damage to a home. Some trees were uprooted. Reported by a NWS employee and the Leon County EMA.

### **Taylor County**

**Steinhatchee**      **16**      **0850EST**      **0.2**      **50**      **0**      **0**      **50K**      **Tornado (F0)**

A waterspout moved onshore and caused minor damage to several homes, as well as downed trees and power lines. Reported by the Taylor County EMA.

**FLZ015-017>019-  
027>029-034**

**Franklin - Leon - Jefferson - Madison - Wakulla - Taylor - Lafayette - Dixie**

**26**      **1500EST**      **0**      **0**      **2.5M**      **Tropical Storm**  
**27**      **1800EST**

Hurricane Jeanne made landfall on the east coast of Florida near Stuart on the evening of September 25. Jeanne weakened to a tropical storm over central and northwest Florida on September 26. Maximum sustained winds reached 42 knots at the USAF C-Tower in the northeast Gulf of Mexico. The peak wind gust and lowest sea-level pressure were 54 knots and 982.1 mb, respectively, at Cross City, FL. Rainfall totals varied from 0.89 inches at Apalachicola, FL, to 7.60 inches at Mayo, FL. Storm surges along the northeast Gulf coast ranged from two to four feet. Areal flooding was reported in portions of the eastern Florida Big Bend. Schools and several local businesses were closed on September 27. Nearly 90,000 customers were without power. There were widespread reports of downed trees and power lines. 215 homes were damaged and 18 destroyed in Dixie County. A state of emergency was declared for the affected counties. Federal assistance was granted for Jefferson, Madison, Lafayette, Taylor, and Dixie counties.

**FLZ034**

### **Dixie**

**26**      **2100EST**      **0**      **0**      **50K**      **Flood**  
**27**      **2300EST**

Torrential rainfall from Tropical Storm Jeanne washed out 30 county roads and isolated 300 homes by high water. Reported by the Dixie County EMA.

**FLZ029**

### **Lafayette**

**26**      **2230EST**      **0**      **0**      **10K**      **Flood**  
**27**      **0030EST**

A half foot of water closed several county roads around State Road 349 and U.S. Highway 27. Reported by the Lafayette County EMA.

## FLORIDA, Southern

**FLZ063-066>070-072-  
074**

**Glades - Hendry - Inland Palm Beach - Coastal Palm Beach - Coastal Collier - Inland Collier - Coastal Broward - Coastal Dade**

**04**      **0900EST**      **0**      **0**      **621M**      **90M**      **Hurricane/Typhoon**  
**05**      **1100EST**

Hurricane Frances formed from a tropical depression in the deep tropical Atlantic on August 25 about 1400 miles east of the Lesser Antilles and reached hurricane strength on August 26. Frances became a Category 4 Hurricane on August 28 while about 700 miles

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## FLORIDA, Southern

east of the Lesser Antilles. Frances then moved generally west northwest and weakened to a Category 2 hurricane while crossing the northwest Bahamas. After stalling for about 12 hours on September 4 in the Florida Straits between Grand Bahama Island and the southeast Florida coast, the center of the nearly 70-mile diameter eye crossed the Florida coast near Sewalls Point, at 1 A.M. EDT, September 5, 2004 with the southern eyewall affecting the extreme northeast portion of Palm Beach County. Frances moved farther inland just north of Lake Okeechobee and weakened to a tropical storm before crossing the entire Florida Peninsula and exiting into the Gulf of Mexico just north of Tampa late on September 5. It made a second landfall as a tropical storm in the eastern Florida Panhandle.

Sustained tropical storm-force winds likely occurred in all six south Florida counties. Although no sustained hurricane-force winds were officially observed in any of the six south Florida counties, an NWS instrument on the eastern shore of Lake Okeechobee at Port Mayaca, just across the Palm Beach County border, measured a sustained wind of 85 mph. At West Palm Beach International Airport the highest sustained wind was 64 mph with a peak gust of 82 mph and the lowest observed barometric pressure was 972 mb. A South Florida Water Management District instrument measured a peak wind gust of 92 mph over the eastern portion of Lake Okeechobee. The estimated peak wind gust in the Palm Beach metro area was 91 mph at Jupiter Inlet with a peak wind gust of 87 mph measured by a C-MAN station at Lake Worth Pier. In Glades County near the western shore of Lake Okeechobee the highest measured sustained wind was 60 mph with a peak gust of 90 mph. In Clewiston, a sustained wind of 60 mph with a gust of 80 mph was estimated. The highest measured sustained wind at Fort Lauderdale-Hollywood International Airport was 41 mph with a peak gust of 55 mph. In Miami-Dade County a maximum sustained wind of 62 mph with a peak gust of 78 mph was measured at the C-MAN station at Fowey Rocks Light with sustained winds of 42 mph and a peak gust of 59 mph at Miami International Airport. At the Naples Municipal Airport the ASOS measured a maximum sustained wind of 38 mph with a peak gust of 54 mph.

A maximum storm-total rainfall amount of 13.56 inches was measured at West Palm Beach International Airport with 10.36 inches of that occurring in a 24-hour period. Unofficial storm-total rainfalls included 9.56 inches at Boynton Beach, 8 inches at Deerfield Beach and 7.18 inches at Hillsboro Canal. Widespread storm-total amounts of 3 to 5 inches occurred in southeast and interior south Florida with southwest Florida averaging 1 to 3 inches. Rainfall flooding was mostly minor except for a few locations in Palm Beach County which had up to 3 feet of standing water. A section of I-95 in Palm Beach County was closed due to a large sinkhole.

The maximum storm surge was estimated to have ranged from 2 to 4 feet along the northeast Palm Beach Coast to 1 to 2 feet along the northeast Broward Coast. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to 5 feet above and below normal. Coastal beach erosion was moderate in Palm Beach and portions of Broward counties and was minor in Miami-Dade and Collier counties.

There were no confirmed tornadoes.

There were no known direct deaths, but at least 9 people died in the aftermath. Six of these deaths occurred in Palm Beach County, mainly as the result of vehicle-related accidents or from drownings. Two vehicle-related deaths were reported in Broward County and one person died in Collier County while clearing debris. An unknown number of injuries occurred.

Property damage at the coast occurred mainly to marinas, piers, seawalls, bridges and docks, as well as to boats. Inland structure damage included 15,000 houses and 2,400 businesses in Palm Beach County. Wind damage to house roofs, mobile homes, trees, power lines, signs, screened enclosures and outbuildings occurred over much of southeast Florida including areas near Lake Okeechobee, but was greatest in Palm Beach County.

A preliminary damage estimate for Frances in south Florida is \$620 million, including \$500 million in Palm Beach, \$80 million in Broward, and \$34 million in Miami-Dade. Crop damage in Palm Beach County was estimated at an additional \$70 million to sugar cane and vegetables and additional heavy losses occurred to nurseries.

Florida Power and Light reported power outages occurred to 659,000 customer in Palm Beach, 590,000 in Broward, 423,000 in Miami-Dade, 39,200 in Collier, 2,500 in Hendry and 1,700 in Collier. An estimated 17,000 persons sought refuge in public shelters in Palm Beach County and nearly 7,000 in Broward County.

### **Palm Beach County**

#### **Jupiter**

<b>06</b>	<b>1540EST</b>	<b>0.2</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>Tornado (F0)</b>
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A tornado briefly touched down near Central Boulevard and I-95.

### **Palm Beach County**

#### **Jupiter**

<b>07</b>	<b>1530EST</b>			<b>0</b>	<b>0</b>	<b>Funnel Cloud</b>
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A SKYWARN spotter saw a funnel cloud that quickly dissipated.

### **FLZ063**

#### **Glades**

<b>08</b>	<b>1000EST</b>			<b>0</b>	<b>0</b>	<b>Flood</b>
<b>11</b>	<b>1100EST</b>					

Rain from Hurricane Frances caused minor flooding on Fisheating Creek with a maximum water level of 7.5 feet or 0.5 feet above flood stage.



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September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
FLORIDA, Southern									
Collier County									
East Naples	19	1515EST 1517EST	0.5	20	0	0	75K		Tornado (F1)
A tornado touched down in a vacant construction site just south of the Imperial Wilderness Mobile Home Park then moved northwest through the MHP. Damage was sustained to twenty homes with six suffering major damage.									
Collier County									
East Naples	19	1520EST 1522EST	0.5	15	0	0	10K		Tornado (F0)
A tornado touched down 5 miles east of SR 951 south of U.S> 41 doing damage to trees and minor damage to a few mobile homes.									
Palm Beach County									
Boynton Beach	19	1520EST			0	0			Hail (0.75)
A SKYWARN spotter reported hail three-quarter of an inch in diameter.									
Palm Beach County									
Belle Glade	21	2215EST			0	0			Funnel Cloud
A funnel cloud was seen by Police.									
FLZ063-066>068-072-074									
Glades - Hendry - Inland Palm Beach - Coastal Palm Beach - Coastal Broward - Coastal Dade									
	25 26	0900EST 0900EST			0	0	323M	30M	Hurricane/Typhoon

Hurricane Jeanne formed from a tropical depression just east of the Leeward Islands on September 13. She moved across Puerto Rico and Hispaniola then turned north into the Atlantic and became a hurricane on September 20. Jeanne made a clockwise loop for three days in the Atlantic north of Hispaniola before moving west northwest. It strengthened to a Category 3 Hurricane while over the northwest Bahamas and then made landfall around 11 P.M., September 25 near the south end of Hutchinson Island, nearly coincident with the landfall point of Hurricane Frances nearly three weeks before. The 40-mile diameter eye was not quite as large as Frances, but the southern eyewall again affected northeast Palm Beach County. After landfall Jeanne initially moved along a track similar to Frances, just north of Lake Okeechobee as it weakened to a tropical storm then it turned to the northwest and moved over the northwest Florida Peninsula.

Although slightly smaller and stronger than Hurricane Frances, winds and pressures over southeast Florida were remarkably similar to Frances. Unfortunately, the ASOS at West Palm Beach International Airport quit sending data during the height of the hurricane. Sustained tropical storm-force winds likely occurred over most of Palm Beach and northeast Glades counties and portions of Broward, Hendry and Collier counties. Although no sustained hurricane-force winds were officially observed in any of the six south Florida counties, portions of northern Palm Beach County mostly likely experienced them. A South Florida Water Management District (SFWMD) instrument in the Martin County portion of Lake Okeechobee measured a 15-minute sustained wind of 79 mph with a peak gust of 105 mph. In metropolitan Palm Beach the highest official sustained wind speed was 60 mph with a peak gust of 94 mph from the C-MAN station at Lake Worth Pier. An unofficial peak wind gust of 125 mph was measured in West Palm Beach at the Solid Waste Treatment Plant. In Glades County near the western shore of Lake Okeechobee the highest sustained wind measured at a SFWMD instrument was 68 mph with a peak gust of 94 mph. Near Clewiston the highest measured sustained wind was 31 mph with a peak wind gust of 72 mph from a SFWMD instrument. The highest measured sustained wind in Broward County was 46 mph with a peak wind gust of 67 mph from the ASOS site at Pompano Beach Airpark. At Fort Lauderdale-Hollywood International Airport the ASOS site measured a maximum sustained wind of 40 mph with a peak gust of 56 mph. In Miami-Dade County a maximum sustained wind of 49 mph with a peak gust of 59 mph was measured at the C-MAN station at Fowey Rocks Light with sustained winds of 26 mph and gusts to 36 mph at Miami International Airport ASOS. At the Naples Municipal Airport, the ASOS maximum sustained wind was measured at 33 mph with a peak gust of 45 mph. The lowest barometric pressure of 960.4 mb was measured at a SFWMD site in the Martin County portion of Lake Okeechobee.

A SFWMD gage measured a maximum storm-total rainfall amount of 10.22 inches over the eastern portion of Lake Okeechobee. A SFWMD gage about four miles west of West Palm Beach International Airport measured 9.10 inches with 8.79 inches of that occurring in a 24-hour period. At Moore Haven, 5.99 inches of rain was measured. Widespread storm-total amounts of one to four inches occurred in most of southeast and interior south Florida with Miami-Dade County and Collier County averaging one half to one inch. Mostly minor rainfall flooding was observed except locally severe in Palm Beach Gardens, Jupiter and in the farmlands of western Palm Beach County.

The estimated maximum storm surge ranged from two to four feet along the northeast Palm Beach Coast to one to two feet along the northeast Broward Coast. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to seven feet above and below normal causing severe flooding of some marinas. Beach erosion was moderate in Palm Beach and minor in Broward and Miami-Dade counties.

There were no confirmed tornadoes.

There were no known direct deaths but four persons died in the aftermath. An unknown number of injuries occurred.

Property damage from storm surge and winds at the coast occurred to condos, marinas, piers, seawalls, bridges and docks, as well as

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## FLORIDA, Southern

to boats and a few coastal roadways. Inland wind damage to building roofs, mobile homes, trees, power lines, signs, and outbuildings occurred over mainly over Palm Beach County and portions of eastern Glades and Hendry counties.

A preliminary damage estimate for Jeanne in southeast Florida is \$330 million, including \$260 million in Palm Beach, \$50 million in Broward and \$10 million in Miami-Dade. Agricultural Damage in Palm Beach County was estimated at \$30 million.

Florida Power and Light reported outages occurred to 591,300 customers in Palm Beach, 165,900 in Broward, 25,100 in Miami-Dade, 5,200 in Collier, 3,000 in Hendry and 1,500 in Glades. An estimated 12,534 persons sought refuge in public shelters in Palm Beach County.

### **FLZ063**

#### **Glades**

27 1100EST

0 0

**Flood**

30 2300EST

Heavy rain from Hurricane Jeanne caused moderate flooding on Fisheating Creek. The highest observed height was 8.3 feet which was 1.3 feet above flood stage.

### **Miami - Dade County**

#### **Kendall**

28

1332EST

0 0

**50K**

**Flash Flood**

1630EST

Extensive street flooding was observed with depths up to eighteen inches. Some minor flooding of residences occurred.

## FLORIDA, West Central

### **Citrus County**

#### **1 E Chassahowitzka**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer one mile east of Chassahowitzka recorded 15.81" and another observer six miles north of Hernado recorded 10.55".

### **Hardee County**

#### **1 S Gardner**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer one mile south of Gardner recorded 8.57".

### **Hernando County**

#### **Brooksville**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer in Brooksville recorded 10.82".

### **Highlands County**

#### **2 E Avon Park**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer two miles east of Avon Park recorded 6.37".

### **Hillsborough County**

#### **3 N Thonotosassa**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer three miles north of Thonotosassa recorded 11.07".

### **Levy County**

#### **15 SE Chiefland to**

#### **6 NE Chiefland**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer six miles northeast of Suwannee recorded 15.44" and another observer recorded Yankeetown 11.02".

### **Manatee County**

#### **3 SE Ellenton**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer three miles southeast of Ellenton recorded 6.16".

### **Pasco County**

#### **1.8 S Land O Lakes**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer three miles north of Lutz recorded 8.71".

### **Pinellas County**

#### **5 E Tarpon Spgs**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer five miles east of Tarpon Springs recorded 7.59".

### **Polk County**

#### **3 E Lakeland**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer three miles east of Lakeland recorded 8.70".

### **Sumter County**

#### **5 NW Lake Panasoffkee**

04

0600EST

0 0

**Heavy Rain**

08 0600EST

A National Weather Service observer five miles northwest of Lake Panasoffkee recorded 8.67".

The relatively slow moving Hurricane Frances produced rainfall of 10 to 16 inches along the track of the eyewall in west central

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## FLORIDA, West Central

Florida. Further south, the counties of Sarasota, DeSoto, Charlotte and Lee all recorded three day rainfall totals mostly between 2 to 4 inches.

### Polk County

2 E Kathleen to  
3 S Kathleen

04	2108EST 2113EST	3.6	50	0	0				Tornado (F0)
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A tornado was reported by the public near Kathleen. The location and time of this tornado were based on radar.

FLZ039-042-048>051-  
055-061>062-065

Levy - Citrus - Hernando - Pasco - Pinellas - Hillsborough - Manatee - De Soto - Charlotte - Lee

05	0800EST			1	0	179.4M			Tropical Storm
06	2300EST								

Hurricane Frances made landfall just after midnight on September 5th near Vero Beach as a Category 2 storm. The hurricane continued to move slowly west northwestward across central Florida to near Bartow by 2 pm, and just northeast of Tampa by 8 pm, when it was downgraded to a tropical storm. It then emerged back into the Gulf of Mexico near Hudson shortly before midnight. Hurricane Frances took almost 24 hours to move through the Florida peninsula. Frances continued northwestward through the northern gulf of Mexico, making a second landfall on the afternoon of September 6th in the Florida big bend near Tallahassee as a tropical storm.

In Lee County the observation at Big Carlos Pass recorded a gust to 51 knots (59 MPH) from the west at 12:18 AM EST on 09/05/2004. One direct death was reported when an elderly man was blown over by a wind gust while walking his dog 10 feet outside of his home. He hit his head on the sidewalk and died from blunt force trauma. Fourteen homes were destroyed by the wind.

In Sarasota and Manatee Counties the maximum wind recorded at the Sarasota-Bradenton Airport was 46 knots (53 MPH) from the northwest at 12:07 PM EST on 09/05/2004.

In Charlotte County there was a foot of water in Downtown Punta Gorda due to a "back door" storm surge of 5 ft into Charlotte Harbor. Tarps on roofs from Hurricane Charley were blown off of many roofs during Hurricane Frances. The observation from the Punta Gorda Airport recorded a maximum wind of 50 knots (58 MPH) from the southwest at 12:21 AM on 09/06/2004.

In Hillsborough County most of the damage was a result of trees falling on homes, businesses, and power lines. Debris removal alone was \$24 million (not included in damage estimate above). The observation from the Sunshine Skyway Bridge recorded 55 knots (63 MPH) from the north at 9:18 AM EST on 09/05/2004. Two indirect deaths were reported; one was a man who hit a pole while driving in the rain, the other was a Utility Repair Supervisor who was hit by a falling branch while removing tree debris.

In Pasco County there was major damage to 114 homes, minor damage to 782 homes, and 459 reports of flood damage. The observation from Anclote Key recorded a wind gust of 61 knots (70 mph) from the north late on the 09/04/2004.

In Hernando County there were numerous reports of flooded streets and homes. Other reports included trees on homes, shingles off roofs, mobile home and fascia damage, and pool enclosures with moderate damage. The observation from the Brooksville airport recorded a maximum wind of 47 knots (54 MPH) from the north at 1:02 PM EST on 09/05/2004.

In Citrus County a wind instrument at the Crystal River Power Plant recorded a gust to 45 knots (52 MPH) around 4 PM EST on 09/06/2004.

In Levy County the observation at Cedar Key recorded a gust to 51 knots (59 MPH) from the south at 2 PM EST on 09/06/2004.

The damage total listed was estimated by doubling the insured losses unless otherwise noted. The doubling accounted for uninsured losses and damage to the public infrastructure. Flood damage was included within these totals because it was not possible to extract the flood damage information from the available data. M81PH

FLZ043-052-056>057

Sumter - Polk - Hardee - Highlands

05	0800EST			0	0	127.2M			High Wind (G60)
06	0600EST								

Hurricane Frances made landfall just after midnight on September 5th near Vero Beach as a Category 2 storm. The hurricane continued to move slowly west northwestward across central Florida to near Bartow by 2 pm, and just northeast of Tampa by 8 pm, when it was downgraded to a tropical storm. It then emerged back into the Gulf of Mexico near Hudson shortly before midnight. Hurricane Frances took almost 24 hours to move through the Florida peninsula. Frances continued northwestward through the northern gulf of Mexico, making a second landfall on the afternoon of September 6th in the Florida big bend near Tallahassee as a tropical storm. The damage totals listed were caused by trees downed on homes and overland and river flooding.

In Polk County there were four indirect deaths reported; two were separate incidents of people falling off of a roof while cleaning storm debris and two FEMA contract employees were killed when their aircraft clipped a tower and crashed while they were spraying for mosquitoes due to excessive standing water from Hurricane Frances.

In Highlands County there was one indirect death of a man falling off his roof while cleaning storm debris.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## FLORIDA, West Central

In Sumter County there was one indirect death of a man by carbon monoxide poisoning from a generator running inside his home.

The damage total listed was estimated by doubling the insured losses unless otherwise noted. The doubling accounts for uninsured losses and damage to the public infrastructure. Flood damage was included within these totals because it was not possible to extract the information from the available data.

**FLZ049>051-055-062**

**Pasco - Pinellas - Hillsborough - Manatee - Charlotte**

06	0200EST				0	0	2.5M		Astronomical High Tide
	1000EST								

Tropical storm force winds from the southwest produced tides one to five feet above normal from New Port Richey south to Punta Gorda as Hurricane Frances moved northwest just north of downtown Tampa. One foot of water was found in downtown Punta Gorda as tides in Charlotte Harbor reached five feet above normal. Tides were two to three feet above normal elsewhere and produced moderate beach erosion from Venice to Clearwater and flooding low lying homes near downtown Saint Petersburg.

**Polk County**

3 SW Bartow to  
2.7 SW Bartow

06	0932EST	0.3	30		0	0			Tornado (F0)
	0935EST								

A feeder band behind Hurricane Frances produced a brief tornado. Radar estimated the storm's movement to be northeast at 45 mph.

**FLZ049-051>052-055>056-061**

**Pasco - Hillsborough - Polk - Manatee - Hardee - De Soto**

06	1200EST				0	0			Flood
14	1200EST								

Widespread heavy rain associated with Hurricane Frances across west central Florida lead to record flooding on many of the rivers.

In Pasco County, Cypress Creek at Worthington Gardens (flood stage 8 feet) reached it's all time high of 13.78 feet on the 11th and the Anclote River at Elfers (flood stage 20 feet) reached the 7th highest stage ever at 24.44 feet on the 7th.

In Hillsborough County, The Hillsborough River at the Morris Bridge (flood stage 32 feet) reached it's all time high of 34.38 feet on the 8th, the Alafia River at Lithia (flood stage 13 feet) reached the 5th highest stage at 22.33 feet on the 7th, and the Little Manatee River at Wiamauma (flood stage 11 feet) reach 17.09 feet on the 7th.

The Peace River at Bartow in Polk County (flood stage 8 feet) reached it's all time high of 17.21 feet on the 11th.

The Peace River in Zolfo Springs in Hardee County (flood stage 16 feet) reached the 5th highest stage of 22.42 feet on the 8th.

Finally, the Manatee River at Myakka Head in Manatee County (flood stage 11 feet) reached 15.94 feet on the 11th.

Damage estimates were included in the hurricane report because it was not possible to extract the flood damage information from the available data.

**Pasco County**

3 SSW Aripeka

06	2100EST	0.2	30		0	0			Tornado (F0)
----	---------	-----	----	--	---	---	--	--	--------------

The broadcast media relayed a report of a tornado in Sea Pines with several trees down, including a 60 foot tall tree across the road.

**FLZ039-050>051-055-060**

**Levy - Pinellas - Hillsborough - Manatee - Sarasota**

15	1200EST				0	0			Astronomical High Tide
20	1200EST								

Hurricane Ivan moved north through the eastern Gulf of Mexico and produced tides one to four feet above normal along the Gulf Coast of Florida. The higher than normal tides combined with a pounding surf to cause moderate to major beach erosion along Florida's Gulf Coast. Sarasota County reported moderate beach erosion at Turtle Beach on Siesta Key. Manatee County reported moderate beach erosion at Bradenton Beach. In Tampa Bay tides were 1.26 feet above normal at Port Manatee, 3.50 feet above normal in Hillsborough Bay, and 1.34 feet above normal at the St. Pete Pier. Clearwater recorded tides 1.51 feet above normal and tides at Cedar Key were 1.91 feet above normal.

**Levy County**

Williston

15	2117EST	0.2	30		0	0			Tornado (F0)
----	---------	-----	----	--	---	---	--	--	--------------

Emergency Management reported a brief tornado touchdown in the city of Williston.

**Levy County**

Bronson

15	2122EST	0.2	30		0	0			Tornado (F0)
----	---------	-----	----	--	---	---	--	--	--------------

Emergency Management reported a brief tornado touchdown in the city of Bronson.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **FLORIDA, West Central**

### **Lee County**

**1 WSW Cape Coral**    **19**    **1528EST**    **0.3**    **50**    **0**    **0**       **Tornado (F0)**  
**1533EST**

The Cape Coral Fire Chief reported a brief tornado with damage limited to lanai and roof fascia at 15 homes near the water on the corner of Southwest 25th Place and Beach Parkway West.

### **Lee County**

**5 NNW Captiva**    **19**    **1629EST**    **0.2**    **30**    **0**    **0**       **Tornado (F0)**  
**1632EST**

A waterspout over Pine Island Sound moved west across Pine Island then into the Gulf of Mexico.

### **FLZ043-056**

#### **Sumter - Hardee**

**25**    **1800EST**       **0**    **0**    **10.4M**       **Strong Wind**  
**26**    **2300EST**

### **FLZ052-057**

#### **Polk - Highlands**

**25**    **1800EST**       **0**    **0**    **702M**       **High Wind (G61)**  
**26**    **2100EST**

Hurricane Jeanne followed the nearly the same path across Florida as Hurricane Frances three weeks earlier and was the unprecedented fourth hurricane to damage Florida during the 2004 hurricane season. The hurricane moved ashore along the east coast of Florida near Stuart late on September 25th with an eye 30 to 40 miles across. Jeanne took a course north of Lake Okeechobee and decreased to a tropical storm in eastern Polk County around 9 AM EDT on the 26th. The center of Jeanne curved north of Tampa Bay during the afternoon and travelled north along the coastal counties before exiting north through Levy County around 10 PM.

In Highlands County there were 140 homes destroyed and 2,000 homes with major damage. Emergency Management estimated the total damage to be \$452 million. A peak wind of 82 knots (94 MPH) was recorded in Sebring at 3 AM EST on 09/26/2004.

In Polk County a peak wind gust of 67 knots (77 MPH) was recorded in both Frostproof and Bartow between 5-6 AM EST on 09/26/2004.

In Hardee and Sumter Counties the damage was limited to trees falling on homes, vehicles, and power lines.

The damage total was estimated by doubling the insured losses unless otherwise noted. The doubling accounted for uninsured losses and damage to the public infrastructure. Flood damage was included within these totals because it was not possible to extract the flood damage information from the available data.

### **FLZ039-042-048>051-055-060>062-065**

#### **Levy - Citrus - Hernando - Pasco - Pinellas - Hillsborough - Manatee - Sarasota - De Soto - Charlotte - Lee**

**25**    **2200EST**       **0**    **0**    **134.8M**       **Tropical Storm**  
**27**    **0400EST**

Hurricane Jeanne followed the nearly the same path across Florida as Hurricane Frances three weeks earlier and was the unprecedented fourth hurricane to damage Florida during the 2004 hurricane season. The hurricane moved ashore along the east coast of Florida near Stuart late on September 25th with an eye 30 to 40 miles across. Jeanne took a course north of Lake Okeechobee and decreased to a tropical storm in eastern Polk County around 9 AM EDT on the 26th. The center of Jeanne curved north of Tampa Bay during the afternoon and traveled north along the coastal counties before exiting north through Levy County around 10 PM.

In Hillsborough County the observation from the Vandenburg airport recorded a maximum wind gust of 58 knots (67 MPH) from the north at 8:58 AM EST on 09/26/2004.

In Pasco County the COMPS Fred Howard Park Coastal Station recorded a wind gust of 66 knots (76 mph) from the northwest at 12:54 PM EST on 09/26/2004.

In Hernando County the observation from the Brooksville airport recorded a maximum wind of 54 knots (62 MPH) from the north at 11:26 AM EST on 09/26/2004.

In Levy County the observation from Cedar Key recorded a gust to 40 knots (46 MPH) from the northeast at 5 PM EST on 09/26/2004.

In Sarasota County the maximum wind recorded at the Sarasota-Bradenton Airport was 55 knots (63 MPH) from the northwest at 10:04 AM EST on 09/26/2004.

In Charlotte there was 1.5 feet of water in downtown Punta Gorda due to a "back door" storm surge of 5.5 ft into Charlotte Harbor. Tarps on roofs from Hurricane Charley were blown off of many roofs during Hurricane Jeanne. The observation from the Punta Gorda Airport recorded a maximum wind of 53 knots (61 MPH) from the west at 7:17 AM EST on 09/26/2004.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **FLORIDA, West Central**

In Lee County the Big Carlos Pass observation recorded a gust to 49 knots (56 MPH) from the west southwest at 7:42 AM EST on 09/26/2004.

The damage total was estimated by doubling the insured losses unless otherwise noted. The doubling accounted for uninsured losses and damage to the public infrastructure. Flood damage was included within these totals because it was not possible to extract the flood damage information from the available data.

### **Polk County**

#### **Lakeland**

**26 1050EST 0 0 350K Flash Flood**  
**1200EST**

Heavy rains from Hurricane Jeanne caused a retention pond to overflow and eroded the foundation of a strip mall on South Florida Avenue. One third of the strip mall collapsed into the pond. Emergency Management officials reported water in homes in and said many areas in the city looked like a lake.

### **FLZ049>051-055-060-062**

#### **Pasco - Pinellas - Hillsborough - Manatee - Sarasota - Charlotte**

**26 1100EST 0 0 Astronomical High Tide**  
**1700EST**

Tides mostly one to three feet above normal caused minor flooding and minor beach erosion along the Gulf Coast of Florida from Lee County north through Levy County. Downtown Punta Gorda was inundated with 1.5 feet of water due to tides 5.5 feet above normal in Charlotte Harbor. In Tampa Bay tides were 2.0 feet above normal at Port Manatee, 1.3 feet above normal at St Petersburg, and 3.5 feet above normal in McKay Bay.

### **Citrus County**

#### **Floral City**

**26 1100EST 0 0 Heavy Rain**  
**27 1100EST**

A National Weather Service observer recorded 6.66" of rain.

### **Hardee County**

#### **2 N Gardner**

**26 1100EST 0 0 Heavy Rain**  
**27 1100EST**

A National Weather Service observer recorded 6.33" of rain.

### **Hernando County**

#### **2 SE Ridge Manor**

**26 1100EST 0 0 Heavy Rain**  
**27 1100EST**

A National Weather Service observer recorded 7.19" of rain.

### **Highlands County**

#### **2 E Avon Park**

**26 1100EST 0 0 Heavy Rain**  
**27 1100EST**

A National Weather Service observer recorded 5.97" of rain.

### **Polk County**

#### **3 SW Haines City**

**26 1100EST 0 0 Heavy Rain**  
**27 1100EST**

A National Weather Service observer recorded 9.76" of rain.

### **Sumter County**

#### **5 NW Lake Panasoffkee**

**26 1100EST 0 0 Heavy Rain**  
**27 1100EST**

A National Weather Service observer recorded 6.48" of rain.

Hurricane Jeanne caused heavy rains of 6 to 10 inches along the path of the eyewall. Areas to the north and south of the eyewall generally received 2 to 5 inches of rain over a 24 hour period.

### **FLZ042-048-051-055>056**

#### **Citrus - Hernando - Hillsborough - Manatee - Hardee**

**26 1200EST 0 0 Flood**  
**30 2359EST**

Widespread heavy rain combined with saturated ground and swollen rivers to cause river flooding across west central Florida and lead to record flooding on one of those rivers.

In Citrus County, the Withlacoochee River at Holder (flood stage 8 feet) reached an all time high of 10.86 feet on the 30th and the Withlacoochee River at Dunnellon (flood stage 29 feet) reach 30.41 feet on the 27th.

In Hernando County, the Withlacoochee River at Trilby (flood stage 12 feet) reached 16.55 feet on the 29th and the Withlacoochee River at Croom (flood stage 8 feet) reach 11.64 feet on the 30th.

In Hillsborough County, the Alafia River at Lithia (flood stage 13 feet) reached 19.19 feet on the 28th, and the Little Manatee River at Wimauma (flood stage 11 feet) reach 14.60 feet on the 28th.

In Hardee County the Peace River at Zolfo Springs (flood stage 16 feet) reached 21.19 feet on the 29th.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## FLORIDA, West Central

In Manatee County the Manatee River at Myakka Head (flood stage 7 feet) reached 14.54 feet on the 27th.

Damage estimates were included in the hurricane report because it was not possible to extract the flood damage information from the available data.

## FLORIDA, West Panhandle

**FLZ001>006**

**Inland Escambia - Coastal Escambia - Inland Santa Rosa - Coastal Santa Rosa - Inland Okaloosa - Coastal Okaloosa**

13	2100CST				8	0	4B	25M	Hurricane/Typhoon
16	1500CST								

See the narrative on Hurricane Ivan under Alabama, Southwest, September 13-16 ,2004. Ivan will be remembered as one of the most damaging hurricanes to affect the extreme western Florida panhandle in modern history. The \$4 billion in property damage is an estimate, but the final figure could be as low as \$2.5 billion or as high as \$7 billion. F78OT, F60PH, M60PH, F52PH, F87PH, M46VE, M60OU, F8MH

### **Escambia County**

**3 W Gulf Beach to  
2 S Inerarity Pt**

15	1253CST	2	30	0	0	3K		Tornado (F0)
	1302CST							

A fast moving weak tornado developed ahead of Hurricane Ivan. The tornado moved ashore about two miles west of Perdido Key and moved into Baldwin county near Ono Island. Only minor damage occurred with the weak tornado. Most people had already evacuated the area due to Ivan.

### **Escambia County**

**8 E Pensacola Beach to  
2 NE Pensacola Beach**

15	1355CST	7	30	0	0	3K		Tornado (F0)
	1400CST							

A fast moving tornado moved in from the Gulf of Mexico about eight miles east of Pensacola Beach. The weak tornado remained over isolated areas and thus caused only minor damage. The weak tornado moved into Santa Rosa county southeast of Gulf Breeze.

### **Santa Rosa County**

**2 SE Gulf Breeze to  
2 W Gulf Breeze**

15	1400CST	5	30	0	0	3K		Tornado (F0)
	1403CST							

A fast moving tornado moved into Santa Rosa county from Escambia county. The weak tornado entered the county southeast of Gulf Breeze and moved rapidly west northwest before dissipating just west of Gulf Breeze. The tornado caused minor damage. The area had been evacuated due to Hurricane Ivan.

### **Escambia County**

**West Portion**

16	0300CST			0	0			Flash Flood
	0500CST							

As Hurricane Ivan was moving inland, a band of very heavy rainfall developed east of the center. Radar estimated that five to seven inches of rain fell in a two hour period across the area. This caused most of the roads in the west part of the county to flood. This was in addition to the surge and high winds that were blowing trees down. As the storm moved north, the water drained off the roads.

**FLZ002**

**Coastal Escambia**

22	2300CST			0	0			Heavy Surf/High Surf
23	1400CST							

About a week after Hurricane Ivan impacted the area on September 16th, the remnants of the storm re-entered the Gulf of Mexico after making a large clockwise loop over the southeastern United States.

As a result, high waves and surf action again impacted already heavily eroded area beaches . Pensacola Beach was still closed, but the high water hindered clean up efforts along the beach. The water also ended up under homes that had severe erosion a week earlier. As the remnants of Ivan slowly moved off to the northwest over the western Gulf, the high surf subsided.

## GEORGIA, East Central

### **Columbia County**

**Countywide**

27	1628EST			0	0	0		Flash Flood
	1800EST							

Flash flooding along several small streams sent water into a few homes.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, Lower

**GAZ132>136-149>154-162>166 Coffee - Jeff Davis - Bacon - Appling - Wayne - Atkinson - Ware - Pierce - Brantley - Inland Glynn - Coastal Glynn - Echols - Clinch - Charlton - Inland Camden - Coastal Camden**

**05 0001EST 0 0 Tropical Storm**  
**07 2359EST**  
Hurricane "Frances"

Hurricane "Frances" made landfall along the central Florida coast and, as a weakening system, moved west-northwest across central Florida and then northwestwards into southwest Georgia. This motion brought the area into the periphery of the storm and southeast Georgia experienced sustained tropical storm force winds with higher gusts. Across portions of southeast Georgia heavy rainfall resulted in extensive flooding in many locations.

The lowest Mean Sea Level Pressure readings across southeast Georgia ranged from 995.2 mb/29.39 in Hg at Douglas Airport (KDQH) to 1002.3 mb/29.60 in Hg at Brunswick, Glynnco Airport (KBQK).

Maximum sustained winds recorded in southeast Georgia were 35 knots/40 mph at the Alma Airport. The peak recorded gusts were 39 knots/45 mph at both Alma and Waycross Airports. Unofficial gusts of 55 to 60 mph occurred along the immediate coast at St. Simons Island. Some tree blow down occurred in bands with roof and some structural damage. Most structural damage was associated with mobile homes and generally weakly constructed permanent structures. Several cases of large trees destroying manufactured homes were reported, with two injured occurring in Wayne County due to trees down on homes.

Wave heights of 10 to 20 feet were recorded across the coastal waters with tides running one to two feet above astronomical tide levels. The right lane of the St. Simons Island Causeway was flooded and impassable. Extensive beach erosion occurred due to long duration of onshore winds both from "Frances" as well as a period of onshore flow preceding the event.

Rainfall totals across southeast Georgia generally ranged from 5 to 10 inches. The heaviest rainfall was associated with a rainband which moved out of Apalachee Bay across north Florida, the Suwannee Valley and into portions of Southeast Georgia. This band dropped up to 16 inches of rain from near Ocala, Florida through the Suwannee Valley and then across the Florida-Georgia State line over Waycross to near Baxley. Peak Cooperative Observer rainfall reports with this band are 11.94 inches at Patterson and 10.40 inches at Baxley. Homes were flooded across the region with the St. Marys River area in Camden and Clinch Counties especially hard hit. Many primary roads were flooded and secondary and dirt roads were washed out for up to a week. Most rivers in the region were pushed to flood stage with several approaching record flood.

Tornadoes occurred across the entire region with over 20 confirmed touchdowns. The banded nature of the tropical storm wind damage made it very difficult to differentiate between wind damage and tornado damage in subsequent storm damage surveys. No fatalities or injuries are believed to have occurred due to tornado touchdowns.

Overall tree blow down, power outages and roadways blocked by trees were reported most areas. In the heavy rainfall areas many dirt and secondary roads were left impassable for an extended period.

### Coffee County Ambrose

**05 1915EST 0 0 Funnel Cloud**

Hurricane "Frances"

### GAZ136

**Wayne**  
**08 1210EST 0 0 Flood**

Flood waters of the Littel Satilla River were threatening mobile homes in the area.

### GAZ152

**Brantley**  
**09 0000EST 0 0 Flood**  
**10 1100EST**

### GAZ165

5 dirt roads impassable due to flooding. About 200 miles of dirt roads are experience flooding.

**Inland Camden**  
**09 1100EST 0 0 Flood**

### GAZ164

12 roads remain closed in Browntown area due to flowing water.  
**Charlton**  
**09 1100EST 0 0 Flood**

### GAZ164

18 homes evacuated and flooded along St. Marys River in southern Charlton county. Location about 8 miles east of Taylor (city in Baker county Florida).

**Charlton**  
**09 1100EST 0 0 Flood**

8 homes evacuated due to rising St. Marys river 3 miles SW of Folkston.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, Lower

### **GAZ164**

#### **Charlton**

**10 1513EST**

**0**

**0**

**Flood**

12 inches of standing rainfall water in the streets of Folkston on U.S. 1

### **Coffee County**

#### **7 S Ambrose**

**16 1035EST**

**2**

**1**

**0**

**0**

**Tornado (F0)**

2335 EDT reported by County 911 Center

Mobile home and sheds damaged. Tree tops twisted and other trees uprooted. Report relayed to 911 center at 1250 am 9/17. Event time approximate.

### **GAZ132>136-149>154-162>166**

**Coffee - Jeff Davis - Bacon - Appling - Wayne - Atkinson - Ware - Pierce - Brantley - Inland Glynn - Coastal Glynn - Echols - Clinch - Charlton - Inland Camden - Coastal Camden**

**25 1200EST**

**0**

**0**

**Tropical Storm**

**27 1800EST**

Hurricane "Jeanne"

Hurricane "Jeanne" made landfall along the central Florida east coast, very near the location of Hurricane "Frances" some two weeks earlier. Like "Frances" this system moved west-northwest across central Florida and then northwestwards into southern Georgia. This motion once again brought the area into the periphery of the storm as north Florida and southeast Georgia experienced sustained tropical storm force winds with gusts to near hurricane force along the coast. Across the Suwannee Valley and portions of southeast Georgia sustained winds were higher than during "Frances" and rain once again resulted in flooding of many locations.

The lowest local barometric pressure of 980.0 mb/28.94 in Hg was recorded in Ocala, Florida as the center moved to near the city. The lowest pressure readings across north Florida ranged from 980.0/28.94 in Hg at Ocala Airport (KOCF) to 999.4 mb/29.51 in Hg at the National Ocean Systems (NOS) Tide Gage in Fernandina Beach, Florida. The lowest pressure readings across southeast Georgia ranged from 993.9 mb/29.35 in Hg at Douglas airport (KDQH) to 1001.4 mb/29.57 in Hg at Brunswick, Glynnco Airport (KBQK).

Maximum sustained winds recorded were 48 knots/55 mph at the St. Augustine CMAN site (SAUF1) on the St. Augustine Pier. The peak gust was also recorded at SAUF1 with 65 knots/75 mph occurring on the 26th. Generally land stations (ASOS, AWOS III and mesonet stations) reported sustained winds of 30 to 50 mph with gusts of 40 to 60 mph. Tree blow down once again occurred in bands with roof and some structural damage with the most pronounced damage over the Suwannee Valley and southeast Georgia where "Frances" was not quite as severe. Most structural damage was associated with mobile homes and generally weakly constructed permanent structures. Several cases of large trees destroying manufactured homes were once again observed. One child was killed due to a tree fall.

Wave heights of 20 feet were recorded across the coastal waters with tides running one to two and a half feet above astronomical tide levels on the open ocean. Tides three to four feet above astronomical occurred on the St. Johns River causing flooding in low lying areas. Extensive beach erosion once again occurred due to long duration of onshore winds both from "Jeanne" as well as a period of onshore flow preceding the event.

Rainfall totals across north Florida and southeast Georgia generally ranged from 3 to 7 inches. The heaviest rainfall was once again over the Suwannee Valley and southeast Georgia with Live Oak, Florida experiencing 10.88 inches of rain. Due to the already saturated conditions, sheet flooding, river flooding and road washouts again occurred with this event with Live Oak and southeast Georgia hard hit. Most rivers in the region returned to to flood stage and portions of Interstate 10 were again closed due to flooding.

Tornadoes occurred across the coastal region; however, the tornado outbreak was not as extensive as with "Frances." The banded nature of the Tropical Storm wind damage again made it very difficult to differentiate between wind damage and tornado damage in subsequent storm damage surveys. No fatalities or injuries are believed to have occurred due to tornado touchdowns.

Overall tree blow down, power outages and roadways blocked by trees were reported in most areas. In the heavy rainfall areas many dirt and secondary roads were once again left impassable.

### **Clinch County**

#### **Cogdell**

**26**

**2255EST**

**1**

**1**

**0**

**0**

**Tornado (F0)**

Hurricane "Jeanne"

Storm spotter surveyed area and sent pictures to the NWS which showed F0 tornado damage off of Cogdell highway in Northern Clinch county. A patch of 20-30 trees, in the middle of a pine forest, was damaged. Some trees were blown down in varying directions and others were snapped off at their tops.

## GEORGIA, North and Central

### **Spalding County**

#### **Griffin**

**01**

**1630EST**

**0**

**0**

**100K**

**Lightning**

The Griffin Daily News reported that lightning struck a home on Manley Road. The home suffered significant damage as the attic and some of the living area was set on fire. Even areas that did not burn suffered extensive smoke damage.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

### **Lamar County**

**Barnesville**      **01**      **1730EST**                **0**      **0**           **Hail (0.75)**

The public reported penny-sized hail.

### **Jones County**

**Griswoldville**      **01**      **1858EST**                **0**      **0**           **Hail (1.00)**

The public reported dime to quarter-sized hail.

### **Laurens County**

**Dublin**      **01**      **1930EST**                **0**      **0**      **5K**           **Lightning**

The Macon Telegraph reported that lightning struck a well pump that served both the West Laurens Middle and High Schools, knocking the pump out of service and forcing the closure of the school for the day.

### **Putnam County**

**Eatonton**      **01**      **2130EST**                **0**      **0**      **0.50K**           **Thunderstorm Wind (G50)**

The Putnam County Sheriff reported that a couple of trees were blown down. In addition, the public reported pea-sized hail and that 4.2 inches of rain fell in the area during a one hour period between 10 pm and 11 pm EDT.

### **Spalding County**

**Griffin**      **02**      **0200EST**                **0**      **0**      **5K**           **Lightning**

The Griffin Daily News reported that lightning struck one of the city's main water pump distribution stations causing damage to one of the city's two main water supply lines. The line was shut down most of the day while repairs were made.

**GAZ001>009-011>016-019>025-027-030>039-041>062-066>076-078>086-089>098-102>113**

**Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Warren - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Washington - Glascock - Jefferson - Harris - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Emanuel - Muscogee - Chattahoochee - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Stewart - Webster - Sumter - Dooley - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs**

**06**      **1200EST**                **0**      **0**           **Tropical Storm**  
**07**      **2000EST**

Hurricane Frances, at one point a category four hurricane (on the Saffir-Simpson scale) with sustained winds of 145 mph, reached the east coast of Florida just north of West Palm Beach, Florida early on September 5th. The storm weakened to a Tropical Storm as it continued west-northwest across the Central Florida Peninsula reemerging over the northwest Gulf of Mexico early on September 6th. The storm then took on more of a northwestward movement, making landfall later on the 6th near Saint Marks Florida along the Florida Panhandle Gulf Coast. Continuing north-northwestward from this point, Tropical Storm Frances entered far southwest Georgia near Bainbridge late in the evening on the 6th. The storm continued moving north-northwest through far western Georgia on the 7th to near Atlanta around midnight on the 7th, then to near Chattanooga, Tennessee early on the 8th. By far the most significant problem with Frances for Georgia was strong, sustained winds of 35 to 40 mph with gusts in excess of 50 mph. Most of the high winds were concentrated in a large east-west oriented rain band that moved north across Georgia during the evening of the 6th and the early morning hours of the 7th. It was during this period of time that significant damage occurred across many Central, East Central, and North Central Georgia counties. The strongest winds and most significant damage occurred in the areas east and south of a line from Americus, to Atlanta, to Athens. Many of the counties within this area suffered extensive wind damage. Dozens to hundreds of trees were blown down, also bringing down dozens to hundreds of power lines. Nearly 300,000 people were left without power during the storm, several thousand for several days. Dozens of homes suffered major damage throughout Central and North Central Georgia, with dozens more sustaining minor damage. The most significant damage took place in an area bounded by Macon, Atlanta, Greensboro, Dublin, Americus, and back to Macon. Damages in the millions were observed in several of these counties, including several large pecan orchards which were virtually destroyed. Estimated total damage with Frances \$14.0 million to property and \$26.5 million to crops (mostly pecan, but some peanut and cotton). Forty-one counties in the Peachtree City forecast area received a disaster declaration from the Federal Emergency Management Agency.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

**GAZ002-004>005-007>008-011>016-019>020-024>025-027-030-037>039-041>043-047-051-062-074-076-078-086-089>090-102>103**

**Walker - Whitfield - Murray - Gilmer - Union - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Banks - Jackson - Madison - Polk - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - Walton - Taliaferro - Warren - Washington - Jefferson - Harris - Emanuel - Muscogee - Chattahoochee - Stewart - Webster**

**06 1600EST 0 0 613K Strong Wind**  
**07 1200EST**

Strong wind damage, associated with Tropical Storm Frances, is listed below, in alphabetical order by county for those counties that "strong wind" criteria was either met or assumed to have been met.

**Banks:** The Banks County News of Homer reported that several trees and power lines were down throughout the county. Three large pine trees were down on Carson Segars Road, blocking the road. (Estimated Damage: \$7,000)

**Bartow:** The Bartow County 911 Center reported that three trees and power lines were down around the county. (Estimated Damage: \$5,000)

**Carroll:** The Georgian Newspaper of Carrollton reported that several trees and power lines were down across the county. Several power outages were noted around the county during the early morning hours. (Estimated Damage: \$7,000)

**Chattahoochee:** The Chattahoochee County 911 Center reported that several trees and power lines were down around the county. No major damage was reported, however. (Estimated Damage: \$5,000)

**Chattooga:** The Chattooga County 911 Center reported that a few trees were blown down. (Estimated Damage: \$1,000)

**Dawson:** The Dawson County 911 Center reported that several trees and power lines were blown down. One tree had Georgia Highway 136 blocked for a short while. (Estimated Damage: \$5,000)

**Douglas:** The Douglas County 911 Center reported that a number of trees and power lines were down around the county. No damage to structures was reported, however. (Estimated Damage: \$50,000)

**Emanuel:** The Emanuel County 911 Center reported that several trees and power lines were down around the county, but no structural damage was reported. (Estimated Damage: \$25,000)

**Floyd:** The Floyd County Emergency Management Director and the Rome News Tribune reported that several trees and power lines were down around the county, but damage was far less significant compared to counties further south and east toward Atlanta. Four roads in the county were blocked by fallen trees during the early morning hours. (Estimated Damage: \$5,000)

**Gilmer:** The Gilmer County 911 Center reported that a few trees and power lines were down around the county. The Times Courier of Ellijay reported that one tree, which was weakened by the storm, fell the next afternoon on a vehicle causing minor damage. (Estimated Damage: \$10,000)

**Gordon:** The Rome News Tribune reports that a few trees and power lines were blown down in the county. (Estimated Damage: \$3,000)

**Haralson:** The Haralson Gateway reported that strong winds blew down several trees and power lines around the county. No major damage was reported. The porch of one home suffered minor damage when a tree fell across it. From six to eight large trees had to be removed from roads in the county, along with a number of smaller trees and tree limbs. At least 2500 residents were left without power during the height of the storm. (Estimated Damage: \$25,000)

**Harris:** The Harris County Emergency Management Director reported that strong winds blew down a number of trees and power lines throughout the county. Sustained winds of 30 mph with gusts to 47 mph were measured on Davis Wind Equipment in Hamilton. Stronger winds were suspected in the eastern portion of the county. (Estimated Damage: \$25,000)

**Jackson:** The Commerce News of Jackson County reported that only a few trees and power lines were blown down. (Estimated Damage: \$5,000)

**Jefferson:** The News and Farmer Jefferson Reporter reported that numerous trees and power lines were blown down throughout the county. At least 30 roads in the county were blocked. In addition, WPEH radio in Louisville reported that 5.15 inches of rain fell. (Estimated Damage: \$75,000)

**Lumpkin:** The Lumpkin County 911 Center reported that numerous trees were blown down around the county. (Estimated Damage: \$25,000)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

Madison: The Madison County 911 Center reported that several trees and a few power lines were blown down. (Estimated Damage: \$5,000)

Murray: The Murray County 911 Center reported that a few trees were down. (Estimated Damage: \$5,000)

Muscogee: The Columbus Ledger-Enquirer reported that several trees and power lines were down throughout the county. No major structural damage was reported. (Estimated Damage: \$30,000)

Oconee: The Oconee Enterprise of Watkinsville reported that a number of trees and power lines were down throughout the county. (Estimated Damage: \$25,000)

Oglethorpe: The Oglethorpe County 911 Center reported that many trees and power lines were down throughout the county. (Estimated Damage: \$25,000)

Pickens: The Pickens County 911 Center and the Pickens County Progress of Jasper reported that several trees and a few power lines were down. One home sustained minor damage when a tree fell on the structure. (Estimated Damage: \$25,000)

Polk: The Polk County 911 Center reported that a few trees and power lines were down. (Estimated Damage: \$5,000)

Stewart: The Stewart County Emergency Management Director reported that several trees were down, some on roads. (Estimated Damage: \$5,000)

Taliaferro: The Georgia Emergency Management Agency reported that several trees and power lines were down. As much as 80 percent of the county was left without power. (Estimated Damage: \$25,000)

Union: The Union County 911 Center reported that a couple of trees and one power line were down in the Suches area. (Estimated Damage: \$2,000)

Walker: The Walker County 911 Center reported that one tree and one power line were down. A spotter reported that a large 16 inch diameter pin oak tree fell down on a home causing damage to the siding and the roof. (Estimated Damage: \$2,000)

Walton: The Walton Tribune reported considerable damage across the county to trees, power lines, and some vehicles. A number of trees were down throughout the county. One tree fell on and crushed a chain link fence at a private residence. Several vehicles were also damaged when trees or tree limbs fell on them. (Estimated Damage: \$50,000)

Warren: The Warrenton Clipper reported that several trees and power lines were down around the county. However, no damage was reported to homes or other structures. (Estimated Damage: \$25,000)

Washington: The Washington County 911 Center reported that a number of trees and power lines were down throughout the county. No significant structural damage was reported, however. (Estimated Damage: \$50,000)

Webster: The Webster County 911 Center reported that a number of trees and power lines were down throughout the county. No significant structural damage was reported, however. (Estimated Damage: \$50,000)

White: The White County 911 Center reported that a number of trees and power lines were down throughout the county. One home was damaged when a tree fell on the structure. The public estimated wind gusts of 45 mph around Cleveland. (Estimated Damage: \$50,000)

Whitfield: The Whitfield County 911 Center reported that four trees and a couple of power lines were down. (Estimated Damage: \$3,000)

Wilkes: The Wilkes County 911 Center reported that a few trees and power lines were down in the county. (Estimated Damage: \$3,000)

GAZ021>023-032>036-  
045>046-048>050-  
052>061-066>073-075-  
079>085-091>098-  
104>113

Cherokee - Forsyth - Hall - Cobb - North Fulton - Gwinnett - Barrow - Clarke - De Kalb - Rockdale - Newton - Morgan - Greene - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Glascock - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Sumter - Dooley - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs

06	1630EST	0	0	14.0M	26.5M	High Wind (G36)
07	0700EST					

High wind damage, associated with Tropical Storm Frances, is listed below, in alphabetical order by county for those counties that "high wind" criteria was either met or assumed to be met.

# Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated		September 2004
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
Character of Storm									

## **GEORGIA, North and Central**

**Baldwin:** The Georgia Emergency Management Agency reported that extensive and widespread wind damage was observed. Many trees and power lines were down throughout the county and many parts of the county were expected to be without power for up to four days as a result. In addition, four homes suffered major damage and five suffered minor damage. One man was injured and taken to a local hospital when a tree fell on his mobile home. Four to five inches of rain was also reported throughout the county, but no significant flooding problems were reported. (Estimated Damage: \$500,000)

**Barrow:** The Barrow County News of Winder reported that many trees and power lines were down throughout the county. A funeral home was damaged when the relatively new roof was peeled back by the high winds and a large tree fell on the structure causing damage to the embalming and casket room. The funeral home owner's adjacent private residence was also damaged by a fallen tree. Several other businesses and homes in the area sustained minor damage from fallen trees. Other businesses had signs damaged. (Estimated Damage: \$250,000)

**Bibb:** The Georgia Emergency Management Agency, the Bibb County Emergency Management Director, and the Macon Telegraph reported that many trees and power lines were down throughout the county. Two brand new vehicles, one a minivan, were damaged by large pine trees which fell on them and an aerial truck was also damaged by a fallen tree. Several homes sustained minor damage from fallen trees. At least 45,000 people in the county were left without power for an extensive period of time. The Bibb County Emergency Management Director measured wind gusts of 51 mph at his location. (Estimated Damage: \$500,000)

**Bleckley:** The Cochran Journal reported that many trees and power lines were down throughout the county. Many roads were blocked and 50 percent of the county was left without power for many hours. In addition, a large tree fell on and damaged a home on Race Track Lane and the scoreboard at the Cochran High School was blown down by the strong winds. (Estimated Damage: \$500,000)

**Butts:** The Jackson Progress reported that there was extensive damage to trees and power lines throughout the county. One home suffered major damage when a large pecan tree fell on the structure and punctured it in two different areas. In another incident, a 200 year old large 150 foot oak tree fell and barely missed a home, but did block the adjacent street. At Indian Springs State Park, a large tree fell on the main power transmission line, causing the entire park to lose power. In addition, dozens of large trees were blown down throughout the park causing the park to be closed. On Georgia Highway 16, an 18-wheel tanker truck carrying liquid oxygen was overturned by the high winds. Rain froze on the highway as the liquid oxygen spilled from the tanker causing a 6-inch thick sheet of ice to form. (Estimated Damages: \$250,000)

**Cherokee:** The Georgia Emergency Management Agency, as well as the Cherokee County Emergency Management Director and the Cherokee Tribune, reported that dozens of trees and power lines were blown down throughout the county. Hundreds of calls were received at the county 911 office reporting downed trees and power lines. A home on Patriot Trail sustained major damage when a large oak tree fell on the structure and a mobile home, also on Patriot Trail, was destroyed when a large oak tree fell on it. Georgia Highway 92 was blocked at West Wylie Bridge Road east of Woodstock with numerous downed power lines. (Estimated Damage: \$250,000)

**Clarke:** The Athens Banner Herald reported that many trees and power lines were blown down throughout the county, causing damage to some residences, and widespread power outages. Two residences suffered significant damage when large trees fell on them. The roof of a 19th century home on Barber Street, also listed in the National Historic Register, sustained significant damage when a large tree fell on the structure. A duplex on Northview Drive also suffered damage when a large tree snapped and fell on the structure. At least 5000 residents in the county were without power during the height of the storm. Winds gusts of 44 mph were recorded at the Athens airport, but higher wind gusts were estimated elsewhere. (Estimated Damage: \$350,000)

**Clayton:** The News Daily of Jonesboro reported that many trees and power lines were down throughout the county. A large oak tree fell on a home in Morrow causing minor damage to the roof. Another tree fell across North Shore Drive, temporarily blocking the road. Sustained winds of 42 mph with gusts to 52 mph were reported at the Atlanta Hartsfield-Jackson International Airport in the far northwest corner of the county between 2 am and 3 am EDT. (Estimated Damage: \$250,000)

**Cobb:** The East Cobb Neighbor reported that a number of trees and power lines were down throughout the county. One tree fell on a home on Old Georgia Highway 41 in Kennesaw and another 100 foot tall tree fell on a home in Smyrna causing extensive damage to the home. The tree crashed into a bedroom, knocked bricks off the house and broke the roof rafters. Estimates to remove just the tree alone were \$2500. (Estimated Damage: \$250,000)

**Coweta:** The Coweta County 911 center reported that a number of trees and power lines were down throughout the county. The Newnan Times/Herald reported that shingles were blown off the roof of the newspaper's building. Wind gusts at the newspaper were recorded at 48 mph shortly after 4 am EDT. (Estimated Damage: \$150,000)

**Crawford:** The Georgia Post of Roberta and the Macon Telegraph reported that numerous trees and power lines were down throughout the county. At least 36 trees were blown down on roads and 15 power lines were down. Much of the county was left without power, including the county's 911 center. A family had to be rescued when a large tree fell on their home causing damage to the structure. Four vehicles were damaged by fallen trees, including a county rescue truck which was damaged when a tree fell on a road and the vehicle collided with the tree. Finally, a high school football scoreboard in Roberta was blown down by the strong winds. (Estimated Damage: \$500,000)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

**Crisp:** The Cordele Dispatch reported that an extensive number of trees and power lines were down around the county. Roads and streets countywide were literally strewn with debris. A number of roads throughout the county were blocked by fallen trees and power lines and were closed. The Georgia Emergency Management Agency reported that five government buildings were heavily damaged by downed trees, including the Daphne Lodge. Two businesses were damaged and three homes sustained moderate damage, including a home on 13th street in Cordele which suffered minor damage when a large tree fell on it. Damage to government property alone was estimated at \$200,000. Several hundred residents in the county were left without power during the storm. (Estimated Damage: \$500,000)

**DeKalb:** The Atlanta Journal-Constitution reported that a number of trees and power lines were down throughout the county. The worst damage was in the Lithonia and Decatur areas, where one home sustained moderate damage because of a fallen tree. Thousands of residents in the county were left without power for several hours during the morning hours. (Estimated Damage: \$150,000)

**Dodge:** The Dodge County News of Eastman reported extensive damage to trees and power lines throughout the county. Trees and power lines were down throughout the county causing damage to structures, blocking a number of roads. The downed power lines left three to four thousand customers without power as well. A double wide mobile home in Chauncey and a trailer in Rhine both suffered heavy damage when large trees fell on the structures. Two other structures in the county also suffered damage from downed trees. Much of the county received up to 8 inches of rain from late Monday afternoon through Tuesday afternoon. (Estimated Damage: \$500,000)

**Dooly:** The News Observer of Vienna reported extensive damage to trees and power lines around the county, leaving as much as 70 percent of the residents of the county without power during the overnight and morning hours. Dozens of trees and power lines were blown down. The Electric Membership Cooperative for the county reported extensive damage to their power line system throughout the county. (Estimated Damage: \$250,000)

**Fayette:** The Fayette County Emergency Management Director reported that dozens of trees and power lines were down throughout the county. In addition, three homes sustained damage totaling \$225,000 as a result of downed trees. The Coweta-Fayette Electric Membership Cooperative reported extensive damage to power lines throughout the county. Georgia Highway 74 on the south side of Peachtree City was blocked from downed trees and power lines during the early morning hours. All together, some 30 roads around the county were blocked from downed trees and power lines during the morning hours. (Estimated Damage: \$378,000)

**Forsyth:** The Forsyth County News reported that dozens of trees and power lines were down throughout the county. Road crews reported that around 50 trees were down across roadways. The 911 center reported that calls of power lines down on roadways were coming into the center every 5 to 10 minutes during the early morning hours. Widespread power outages were reported in the county. (Estimated Damage: \$150,000)

**Fulton:** The Atlanta Journal-Constitution reported extensive damage across the county, especially the northern sections, to trees, power lines, homes, and vehicles. Several vehicles in Atlanta either suffered extensive damage or were totaled by downed trees. A student's vehicle parked at Georgia Tech University in North Atlanta sustained significant damage when a power pole fell on it. One person narrowly escaped injury when a tree fell on their vehicle on Briarcliff Road. Several homes also sustained minor to moderate damage from fallen trees. The county 911 center received at least 59 reports of downed trees around the county. Widespread power outages were reported throughout the county. (Estimated Damage: \$450,000)

**Glascock:** The News and Farmer Jefferson Reporter reported that a large number of trees were down across the county. Up to 30 roads in the county were blocked by fallen trees. Minor damage was also reported to homes and other structures in the county. One resident of the county reported 6.5 inches of rain. (Estimated Damage: \$150,000)

**Greene:** The Herald Journal of Greensboro reported extensive and widespread damage to trees and power lines throughout the county. Many roads were blocked and several homes sustained extensive damage. A home in Woodville suffered extensive damage when a large tree fell on the structure and crushed the roof. Another home on South Laurel Avenue suffered extensive damage when a large tree fell on the structure. Several large pecan trees were uprooted on Broad Street in Greensboro, one causing damage to the front of a home. Another large pecan tree fell and blocked Chestnut Street in Greensboro. (Estimated Damage: \$175,000)

**Gwinnett:** The Gwinnett Daily Post of Lawrenceville reported extensive damage throughout the county. Numerous trees and power lines were blown down. Several structures suffered moderate damage. An apartment complex on Sweetwater Road suffered moderate damage when a 60-foot pine tree fell on the structure. Another home in Centerville suffered extensive damage when a large tree fell through the roof of the home. A couple of vehicles were also damaged by fallen trees. A small fire was started in the exterior of one home when a tree fell on a power line adjacent to the home. Widespread power outages were noted throughout the county. (Estimated Damage: \$250,000)

**Hall:** The Times newspaper of Gainesville reported that a number of trees and power lines were down around the county. The most extensive damage was noted in the southern portion of the county, where two homes were damaged by downed trees. A tree caused minor damage to a home on Sherman Allen Road in the southern portion of the county and another home also received minor damage in the southern portion of the county. Many residents of the county were without power during the morning hours. Rainfall of 4.50 inches was reported at the Gainesville airport along with 39 mph wind gusts. The strongest winds were estimated in the southern portion of the county. (Estimated Damage: \$175,000)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

**Heard:** The News and Banner of Franklin, along with the Heard County 911 Center, reported that high winds caused widespread damage to trees and power lines throughout the county. One large tree fell on a carport and part of a house on Georgia Highway 100 near Franklin. While the home itself only suffered minor to moderate structural damage, the carport and the two sport utility/truck vehicles inside were destroyed. (Estimated Damage: \$100,000)

**Henry:** The Daily Herald of McDonough reported that a large number of trees and power lines were down throughout the county. A tree fell on a storage shed at one home damaging the shed, a tractor, and other equipment inside. In Locust Grove, fallen trees caused damage to Noah's Ark, a wild animal shelter. Some of the wild cats in the animal shelter were temporarily set free because of damage to the encaging fence. They were captured later in the day. The 911 center reported that around 30 trees were down on roads and power lines within the county. Much of the county was left without power during the early morning hours. (Estimated Damage: \$200,000)

**Houston:** The Houston Home Journal and the Macon Telegraph reported extensive damage across the county, including Robins Air Force Base. Over 100 trees were blown down across the county, landing on roads, power lines, homes, businesses, and vehicles. Two homes suffered extensive damage when large trees fell on the structures. At one home a large tree crashed through the roof damaging the kitchen and den, while at the other end, a large tree crashed through the balcony and landed in one of the bedrooms of the home. A steeple was blown off the River Light Church of God on Corder Road. Up to 50 roads were blocked and closed because of fallen trees while nearly 1000 residents of the county were left without power for days. (Estimated Damage: \$500,000)

**Jasper:** The Georgia Emergency Management Agency, along with the Monticello News, reported extensive and widespread damage throughout the county. Hundreds of trees were blown down, causing damage to homes, blocking roads (three of which were closed), and knocking out power to 70 percent of the county. One home was destroyed while approximately 15 homes suffered major damage and 50 homes minor damage. (Estimated Damage: \$500,000)

**Johnson:** The Macon Telegraph and the Georgia Emergency Management Agency reported widespread damage to trees, power lines, structures, and vehicles within the county. Trees were uprooted, roofs were torn off, and metal awnings were folded like sheets of paper. A portion of the roof was blown off the New Bethel Methodist Church and a tin roof was peeled off a building in Wrightsville. Several trees fell on a Sheriff's Deputy car, causing significant damage to the vehicle. A county fire truck was damaged when a limb crashed through the windshield. At a farm owned by the county Emergency Management Director, large 2-foot diameter pine trees were blown over or snapped off 10-15 feet above the ground. The downed trees and power lines left around 80 percent of the county without power during the storm. (Estimated Damage: \$250,000)

**Jones:** The Macon Telegraph and the Jones County News reported extensive damage to trees and power lines throughout the county. Most of the county was left without power for an extended period of time. The county Emergency Management Director reported that it was the worst and most widespread power outage he had seen in his more than 20 years working with the county. (Estimated Damage: \$250,000)

**Lamar:** The Herald Gazette of Barnesville reported extensive damage to trees, power lines, and even a business in the county. A Christmas Tree Farm reportedly lost 40 percent of their revenue, while a local nursery reported losses of \$25,000, which included the roof of one building. 2000-3000 ornamental trees and 30, 50-100 year-old trees were damaged or destroyed. Trees fell on roads and power lines throughout the county. One large tree fell on Old Georgia Highway 41, blocking the road for several hours, and a power pole fell across a railroad track. (Estimated Damage: \$250,000)

**Laurens:** The Macon Telegraph and the Courier Herald of Dublin reported hundreds of trees and dozens of power lines were down throughout the county. Twelve homes in Dublin sustained minor damage from fallen trees and the Bailey Voting Precinct building was damaged. In addition, several vehicles were damaged. Much of the county was also left without power during the storm. (Estimated Damage: \$750,000)

**Macon:** The Macon County 911 Center and the Citizen and Georgian of Montezuma reported that dozens of trees and power lines were down throughout the county. Around 1500 people were left without power for many hours. (Estimated Damage: \$150,000)

**Marion:** The Tri-County Journal of Marion and Schley counties reported that numerous trees and power lines were down throughout the county. One large oak tree was blown over at the Marion county courthouse in Buena Vista causing damage to an adjacent home on Georgia Highway 26. (Estimated Damage: \$100,000)

**Meriwether:** The Manchester Star Mercury and the Meriwether Vindicator of Greenville reported widespread damage to trees and power lines throughout the county. Georgia Highway 85 near Alvaton was blocked for several hours as a large tree fell on two vehicles and power lines. One of the vehicles was overturned. In Manchester, a large 150-year old oak tree fell on a home causing major damage to the structure, while in Greenville another home sustained major damage when a large tree fell on a home. (Estimated Damage: \$250,000)

**Monroe:** The Macon Telegraph and the Georgia Emergency Management Agency reported widespread damage across the county. Numerous trees and power lines were blown down, causing damage to several homes, a sheriff's vehicle, and closing Interstate 75 for several hours. Literally dozens of trees and some power lines were down on Interstate 75 during the event. In addition, there were several reports of people driving into trees that had fallen down on the roadways. (Estimated Damage: \$300,000)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

Montgomery: The Montgomery Monitor of Mount Vernon reported that numerous trees and power lines were down throughout the county. The fallen trees blocked roads and caused damage to structures, including the fence at the Montgomery County Tennis Court and Baseball field. Up to eight inches of rain fell in parts of the county from late afternoon on the 6th to early afternoon on the 7th. (Estimated Damage: \$150,000)

Morgan: The Madisonian of Madison reported that an extensive number of trees and power lines were blown down throughout the county. A sport utility vehicle was damaged when a large pecan tree fell on it. (Estimated Damage: \$200,000)

Newton: The Georgia Emergency Management Agency and the Covington News reported widespread damage across the county to trees and power lines. Downed trees caused damage to structures and blocked several roads. Georgia Highway 11 was blocked for over 2 hours from fallen trees and a very large tree fell on the Oxford College campus. (Estimated Damage: \$200,000)

Peach: The Macon Telegraph reported widespread and extensive damage throughout the county. A large pecan orchard lost from 500 to 600 large mature pecan trees, with damages mounting into the millions. Hundreds of trees and dozens of power lines were down throughout the county. A large pecan tree fell on and crushed the roof of a house in Fort Valley. Two fire department trucks and a sheriff's vehicle were heavily damaged by falling trees. Georgia Highway 96 was blocked and closed for several miles with numerous trees and power lines down on the road. (Estimated Damage: \$16,000,000)

Pike: The Pike County Journal and Reporter along with the Pike County 911 Center reported that a good number of trees and power lines were down in the county. A large oak tree fell at an accounting firm on Georgia Highway 19 and a large pecan tree fell on a home on Georgia Highway 18 causing damage to the roof. At another location, a carport was destroyed when a large sweet gum tree fell on the structure. (Estimated Damage: \$150,000)

Pulaski: The Hawkinsville Dispatch and News reported extensive damage throughout the county to trees, power lines, and some structures. By far the biggest loss in the county was the loss of the pecan crop. From 300 to 325 mature pecan trees were lost with damage estimates well into the millions. At least 50 percent of the county's pecan crop was lost. Other crop losses included 35 percent of the cotton crop and 25 percent of the peanut crop. In addition to widespread trees and power lines down, some blocking roads, the Senior Citizen Center suffered extensive damage when a large tree fell through the roof causing at least \$70,000 in damage. (Estimated Damage: \$8,000,000)

Putnam: The Eatonton Messenger and the Putnam County 911 Center reported extensive damage across the county. High winds blew down dozens of trees and power lines in the county. A number of homes and several vehicles suffered damage when large trees fell on them. A large pecan tree fell on a home in Eatonton, coming within inches of hurting a 6-year old girl. This was just one of several homes and properties damaged in the area. (Estimated Damage: \$500,000)

Rockdale: The Rockdale Citizen reported that a number of trees and power lines were down throughout the county. One home sustained major damage when a large 70-year old pecan tree fell on the structure. (Estimated Damage: \$150,000)

Schley: The Schley County 911 Center reported widespread damage to trees and power lines throughout the county. (Estimated Damage: \$150,000)

Spalding: The Spalding County 911 Center and the Griffin Daily News reported extensive damage throughout the county. Dozens of trees and power lines were blown down, damaging at least one home and vehicle. At least one road was also blocked when a large tree fell across the road. A 2000 Dodge pickup truck was destroyed when a large tree crushed the vehicle. (Estimated Damage: \$250,000)

Sumter: The Sumter Free Press of Americus, along with the Sumter County 911 Center, reported numerous trees and power lines were down throughout the county. Around 2500 customers were left without power during the storm. Some roads were blocked from fallen trees and large limbs. One large pecan tree fell on the rear of the Staley Middle School, causing damage to the media room. In addition, the pecan crop, as in neighboring counties, suffered major losses. Around 40 percent of the crop in the county was lost as several hundred trees were blown over. (Estimated Damage: \$6,200,000)

Talbot: The Talbotton New Era and the Talbot County 911 Center reported extensive damage throughout the county to trees, power lines, and several structures. Dozens of trees and power lines were blown down throughout the county. A home in Talbotton was virtually destroyed when a large 150-year old oak tree fell down on the structure. An appliance building in Talbotton also suffered moderate damage when the roof was blown off the structure. Wind gusts of at least 50 mph were recorded in the Talbotton area. (Estimated Damage: \$200,000)

Taylor: The Taylor County News of Butler and the Taylor County 911 Center reported extensive damage to trees, power lines, and several structures throughout the county. A laundromat in Butler was damaged when winds twisted off an awning and a portion of a metal roof was blown off a Family Dollar store in Butler. In Reynolds, The First Baptist Church suffered damage when an awning was knocked off by downed trees. In addition, several roads were blocked in the county by fallen trees. (Estimated Damage: \$200,000)

Telfair: The Macon Telegraph, the Telfair Enterprise of McRae, and the Telfair County 911 Center all reported extensive damage to trees and power lines across the county. Dozens of roads were blocked by fallen trees. In addition, a mobile home and most of its possessions were destroyed when a large tree fell across structure. (Estimated Damage: \$200,000)



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

**Toombs:** The Advance of Vidalia and the Toombs County 911 Center reported extensive and widespread damage to trees and power lines throughout the county. Dozens of trees and power lines were down. In the city of Vidalia alone, at least 30 trees were down blocking the roads. Roads were blocked throughout the county and some structures were damaged. Two residents of the county were trapped inside their home after a tree fell on the home causing significant damage to the structure as well as destroying their two vehicles. A roof was also blown off a mobile home on Georgia Highway 292. (Estimated Damage: \$250,000)

**Treutlen:** The Soperton News and the Treutlen County 911 Center reported extensive wind damage throughout the county to trees and power lines. Dozens of trees were blown down, many blocking roads, and others on power lines. Most of the county was without power for an extended period of time. (Estimated Damage: \$150,000)

**Troup:** The Hogansville Home News, along with the Troup County 911 Center, reported numerous trees and power lines down throughout the county. One home suffered extensive damage when a large oak tree fell on the structure and split in half across the roof. (Estimated Damage: \$150,000)

**Twiggs:** The Twiggs New Era of Jefferson and the Twiggs County 911 Center reported extensive and widespread damage across the county to trees, power lines, and structures. The entire county, including the 911 communications center, was left without power for an extended period of time. Some areas of the county were without power for over a day, as several hundred trees were down in the county, many on power lines. In addition, at least 100 trees had to be removed from roadways. Significant property damage was also reported throughout the county with one home completely destroyed, three with extensive damage, five with moderate damage, and two with slight damage. Finally, one resident in the county reported 9.9 inches of rain during the event. (Estimated Damage: \$900,000)

**Upson:** The Georgia Emergency Management Agency and the Upson County 911 Center reported extensive damage across the county to trees, power lines, and some structures. Six roads were blocked and closed because of fallen trees and trees had fallen on and caused damage to three structures in the county. Many of the roads were littered with debris. Approximately 2500 residents in the county were left without power for over a day. (Estimated Damage: \$350,000)

**Wheeler:** The Wheeler County Eagle of Alamo, along with the Wheeler County 911 Center, reported extensive and widespread damage to trees, power lines, and structures throughout the county. Dozens of trees and power lines were down and several roads were blocked. Several structures suffered major damage. The entire roof of one home was crushed when a large tree fell on the structure. A mobile home was destroyed when a large tree fell across the structure and split it in half. Another tree fell on a home causing minor damage, while a pickup truck was damaged when a pine tree fell on the vehicle. In addition, some parts of the county reported receiving 10 to 12 inches of rain during the 24-36 hours that Tropical Storm Frances affected the area. (Estimated Damage: \$375,000)

**Wilcox:** The Wilcox County 911 Center reported widespread tree and power line damage throughout the county. No structures were reported to have been damaged. (Estimated Damage: \$100,000)

**Wilkinson:** The Georgia Emergency Management Agency and the Wilkinson Post of Irwinton reported extensive and widespread damage to trees and power lines throughout the county. Several structures were also damaged. At least three homes sustained significant damage when large trees fell on them, including a large pecan tree on a home in Toombsboro. A tree also fell on the Emergency Management Director's home causing the roof to leak. Approximately 50 percent of the county was left without power for an extended period of time. (Estimated Damage: \$250,000)

GAZ022-027-041-  
047>048-053>054-057-  
060-068-070-072-081-  
084-097-104-106>107

**Forsyth - Madison - Haralson - Walton - Newton - Coweta - Fayette - Henry - Putnam - Pike - Lamar - Jones - Crawford - Wilkinson - Laurens - Sumter - Crisp - Pulaski**

06	2100EST	0	0	42K	Flood
07	1330EST				

All of the flood events below are a result of several hours of moderate to heavy rain associated with Tropical Storm Frances.

**Coweta:** The Newnan Times/Herald reported that more than six inches of rain fell across the county during the early morning hours. Consequently, minor flooding problems were noted elsewhere throughout the county.

**Crawford:** The Georgia Post of Roberta and the Macon Telegraph reported that heavy rain of five inches or more falling over a period of several hours resulted in flooding of roads and some structures. Taylor's Mill Road was flooded and impassable and several bridges on roads around the county were rendered questionable because of high water. In addition, a portion of a preschool in Roberta was flooded. (Estimated Damage: \$10K)

**Crisp:** The Cordele Dispatch reported that six families had to be evacuated from their homes in the Cedar Lake Estates area because the water in an adjacent creek continued to rise out of its banks, threatening homes in the area.

**Fayette:** The Fayette County Emergency Management Director reported that heavy rain caused a breach in the dam of Sams Lake

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

off Old Senioa Road near Tyrone. Minor street flooding was also reported throughout the county. (Estimated Damage \$2,000)

Forsyth: A storm spotter reported that four inches of rain had fallen at his location, five miles north of Cumming, since midnight. As a result, minor street flooding was reported throughout the county.

Haralson: The Haralson Gateway reported that some roads in a Waco neighborhood sustained significant damage from heavy rain associated with Tropical Storm Frances. The roads were mostly low grade, dirt and gravel roads. (Estimated Damage: \$5,000)

Henry: The Henry County 911 Center reported that flooding caused a washout on one road and two other roads to be closed. (Estimated Damage: \$5,000)

Lamar: The Lamar County 911 Center reported that heavy rain caused minor flooding on several roads. One resident in the county observed that 7.25 inches of rain fell during the overnight and early morning hours.

Laurens: The Courier Herald of Dublin reported that heavy rain washed out a road. (Estimated Damage: \$5,000)

Jones: The Macon Telegraph and the Jones County News of Gray reported that heavy rain, on the order of four to five inches, caused flooding of some roads. Portions of Hillsboro Lake Road were two to three feet under water.

Madison: The Madison County 911 Center reported that heavy rain resulted in flooding of Georgia Highway 106.

Newton: The Covington News reported that Jackson Lake, along the southern border of the county, flooded the yards of a number of homes adjacent to the lake. After the water receded, the yards were strewn with debris that had to be cleaned up. More than five inches of rain fell in the area during the early morning hours. (Estimated Damage: \$5K)

Pike: The Pike County 911 Center reported that minor flooding was affecting several roads in the county.

Pulaski: The Hawkinsville Dispatch and News, along with the Pulaski County 911 Center, reported that several roads in the county were flooded.

Putnam: The Putnam County 911 Center reported that several roads in the county were flooded.

Sumter: The Sumter County 911 Center reported that minor street flooding was occurring throughout the county.

Toombs: The Advance of Vidalia reported that several roads in the county were flooded. A couple of minor secondary roads were washed out. (Estimated Damage: \$10K)

Treutlen: The Soperton News reported that one road was flooded and that several creeks were out of their banks. (Estimated Damage: \$5K)

Walton: The Walton Tribune reported some low-lying areas and roads were flooded.

Wilkinson: Heavy rain, on the order of 6 to 8 inches caused one creek to overflow a bridge. No monetary damage was reported.

## **Pulaski County Countywide**

<b>06</b>	<b>2300EST</b>	<b>0</b>	<b>0</b>	<b>10K</b>	<b>Heavy Rain</b>
<b>07</b>	<b>0100EST</b>				

The Hawkinsville Dispatch and News along with the Pulaski County 911 Center reported that heavy rain caused the newly renovated court house to suffer roof damage. The damaged roof allowed water to leak inside, causing damage to part of the new library.

## **Houston County Perry**

<b>07</b>	<b>0000EST</b>	<b>0</b>	<b>0</b>	<b>50K</b>	<b>Heavy Rain</b>
	<b>0200EST</b>				

The Houston Home Journal of Perry reported that heavy rain, on the order of 4-8 inches during the evening and early morning hours, resulted in the collapse of the roof of the First Baptist Church of Perry. Two large gaping holes were left in the roof as a result of the weight of the water on the roof.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, North and Central

### Coweta County

Newnan

07 0200EST  
0600EST 0 0 5K Heavy Rain

The Newnan Times/Herald reported that more than 6 inches of rain fell across the county during the early morning hours in association with Tropical Storm Frances. The heavy rain caused a large sinkhole to develop on East Washington Street. The road was closed as a result.

### Treutlen County

Soperton

07 0300EST  
0600EST 0 0 50K Heavy Rain

The Soperton News reported that heavy rain, associated with Tropical Storm Frances, caused significant leaks in the roof and flooded five rooms of the county high school.

### Gilmer County

Ellijay

07 0900EST  
1100EST 0 0 75K Flash Flood

The Times Courier of Ellijay reported that heavy rain associated with Tropical Storm Frances, resulted in flash flooding that washed away part of a road and a home. The home was condemned and the residents were evacuated.

GAZ001>009-011>016-  
019>025-027-030>039-  
041>062-066>076-  
078>086-089>098-  
102>113

Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Warren - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Washington - Glascock - Jefferson - Harris - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Emanuel - Muscogee - Chattahoochee - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Stewart - Webster - Sumter - Dooly - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs

16 0000EST  
17 1800EST 0 0 Tropical Storm

Hurricane Ivan, a classic long-lived Cape Verde hurricane and at three times within its life cycle a category five hurricane, developed from a tropical wave which moved off the African coast on August 31st. The system became a tropical depression on September 2nd, and tropical storm on September 3rd, and a hurricane early on September 5th. Later that same day, it became a major hurricane. Ivan moved westward for several days and passed over the southern Windward islands, then moved west-northwest through the southern Caribbean passing just north of Venezuela and the Netherlands Antilles. The hurricane reached category five strength on September 9th as it neared Jamaica. The hurricane weakened to a category four storm as it passed near Jamaica. The storm maintained its category four strength as it turned slightly west of north until the 11th when it briefly strengthened once again to a category five storm. The storm passed near Grand Cayman and the west tip of Cuba from September 11th to the 12th as mostly a category four hurricane. The storm then turned to the northwest and moved through the Yucatan Channel. It briefly regained category five strength one more time as it moved through the Gulf, but weakened to a category three hurricane by the time it struck the U.S. Gulf Coast near Gulf Shores, Alabama around 2 am September 16th. From here, the weakening hurricane moved nearly due north to near Birmingham by the evening of the 16th. By this time it had weakened to a tropical storm. The storm then turned northeast across northwest Georgia during the early morning hours of the 17th as it weakened to a tropical depression. Ivan brought tornadoes, high winds, and significant to record flooding to north and central Georgia. The track of Ivan across central and northeast Alabama also put much of central and eastern Georgia in the favorable quadrant for strong spiral feeder bands and tornadoes. Six tornadoes were confirmed with Ivan causing an estimated \$3.4 million dollars in damages. These tornadoes consisted of two F1 tornadoes, one each in Madison and Wilkes county in northeast Georgia, with one F0 tornado reported in Cherokee, Madison, Spalding, and Upson counties. Numerous reports of funnel clouds and other tornado sightings were reported, but no other tornado touchdowns were confirmed. Flooding was extensive and widespread across the west central, north central, and northwest parts of the state. Average rainfall of 5-8 inches was reported in much of the area northwest of a Columbus, to Athens line, with some areas from Atlanta northwest to Trenton reporting in excess of 10 inches of rain. This rain fell just a little over a week from the 3-5 inches of rain which occurred from Tropical Storm Frances. Catastrophic and historical flooding occurred in the Atlanta area, where the excessive rainfall forced many creeks and rivers to record levels. Dozens of homes and businesses in Fulton, Cobb, DeKalb, and Cherokee counties were submerged in flood waters, some for several days thereafter. Extensive flooding was also reported further north and west, especially in Dade and Gilmer counties, where homes and vehicles were washed away by flood waters. Damage estimates from flooding in the Peachtree City forecast area were \$40.9 million dollars. Overall, sustained high winds with Ivan affected less of north and central Georgia than was observed with Frances, just 10 days prior. However, with Ivan the problem was more with wind gusts than it was with sustained winds, such as were observed with Frances. Wind gusts of 50-60 mph were common with one main southeast-northwest oriented spiral rain band that swept across the area during the mid and late afternoon. This left many counties in north and central Georgia with downed trees, power lines, damages to homes, businesses, and vehicles, as well as widespread power outages. Strong winds continued well into the 18th across the north causing even more trees and some power lines to fall. Damages estimates from high winds were \$14.3 million dollars. Another \$5.0 million in damages was caused by river flooding in Cobb county which continued for several days after Ivan exited the area. Twenty-three counties in the Peachtree City, Georgia forecast area of north and central Georgia were given a disaster declaration by the Federal Emergency Management Agency.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

**GAZ021>031>035-041-045>046-082-089 Cherokee - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Haralson - De Kalb - Rockdale - Bibb - Muscogee**

16	0120EST	0	0	5.5M	Flood
18	1800EST				

Rainfall with hurricane Ivan reached 10-12 inches in parts of north Georgia, including the Atlanta metropolitan area. Most of this rain fell within a period of 24 hours or less. Record flooding was reported on many creeks and rivers in the Atlanta Metropolitan area. Peachtree Creek, Nancy Creek, and the Chattahoochee River all reached or exceeded record flood stages. Catastrophic flooding resulted. Some of the stages observed during the event include:

Peachtree Creek: Crested at 22.2 feet, over 5 feet above the flood stage of 17.0 feet. The previous record high crest was 21.1 feet on March 17, 1990, considered a 100-year flood event. An estimated high water mark of 25.8 feet was observed in 1919 before a gage existed at this location.

Nancy Creek: Crested at 15.26 feet, over 4 feet above the flood stage of 11.0 feet. Record high crest of 15.5 feet was observed on December 1, 1973.

Chattahoochee River (Vinings): Crested at 22.60 feet, more than 8.0 feet above the flood stage of 14.0 feet. Record high crest of 23.10 feet was observed on March 7, 1990. This was the second highest crest since the Buford Dam was built.

Suwanee Creek: Crested at 11.1 feet, more than 3 feet above the flood stage of 8.0 feet. Record high crest of 11.42 feet on March 17, 1990.

Big Creek (Alpharetta): Crested at 11.3 feet, more than 4 feet above the flood stage of 7.0 feet. Previous record high crest of 11.29 feet on March 9, 1998.

Sope Creek (Marietta): Crested at 17.47 feet, more than 5 feet above the flood stage of 12.0 feet. Previous record high crest of 15.74 feet on March 8, 1998.

Other county flood reports not considered flash flooding:

Barrow: Heavy rain caused flooding of several roads throughout the county. Flooding was reported in the Betts Mill, Betts Creek, and Jamestown areas. However, there were no reports of roads or bridges washed out or significant structural flooding. (Estimated Damages: \$5,000)

Bibb: Heavy rain caused several streams in the county to exceed bankfull through the overnight hours.

Cherokee: Moderate flooding occurred along the Etowah River throughout the county, including Canton. Several businesses were flooded in Canton along the river where the river crested 6 to 7 feet above its flood stage of 16 feet on September 27<sup>th</sup>. Numerous roads were flooded from the river flooding. (Estimated Damage: \$500,000)

Cobb: As a result of the Chattahoochee River reaching a record high crest of 23.1 feet, major to catastrophic flooding was reported in areas along and near the river, especially in the Vinings area. Several million dollar homes were literally surrounded on four sides by the flood waters of the Chattahoochee River. Flood waters rose up to six-feet deep on homes on Paces Ferry Drive and in the Brandy Station Subdivision. Train tracks and pastures near I-285 were also inundated by the flood waters. At Six Flags Amusement Park near I-285 in the southern portion of the county, two roller coaster rides and approximately 3000 parking spaces were submerged in flood waters. (Estimated Damages: \$5,000,000)

Haralson: The 911 Center reported that several roads around the county had water standing on them from several hours of heavy rainfall. At least seven roads in the county were closed because of flooding.

Muscogee: The Columbus Ledger-Enquirer reported that the river flooded from heavy rain upstream and flooded portions of Rotary Park Victory Drive.

Paulding: The public reported that several streams were out of their banks and several streets were flooded.

Rockdale: The Rockdale Citizen reported that flooding along the Yellow River on Daniel's Bridge Road stranded several residents in their home. The road was completely flooded and impassable.

**GAZ001>002-006>009-011-013>016-019>025-030>038-041>047-049-049-053>056-066-068>069-071-089 Dade - Walker - Fannin - Gilmer - Union - Towns - Chattooga - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Morgan - Coweta - Fayette - Clayton - Spalding - Troup - Pike - Upson - Monroe - Muscogee**

16	1000EST 2000EST	0	2	14.3M	High Wind (G65)
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# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

High wind damage, associated with Tropical Storm Ivan, is listed below, in alphabetical order by county for those counties that "high wind" criteria was either met or assumed to be met.

**Banks:** The Banks County News of Homer reported widespread damage to trees and power lines throughout the county. More than 73 trees were uprooted or blown down, and many roads were blocked by downed trees and power lines. One home and an unoccupied camper were damaged when trees fell on them and a power line fell on a vehicle while traveling on a county highway. (Estimated Damage: \$250,000)

**Barrow:** The Barrow County News and the Gwinnett Daily Post both reported widespread damage to trees and power lines countywide. Much of the county lost power from downed power lines and several residents of the county were without power for three days. (Estimated Damage: \$200,000)

**Bartow:** The Daily News Tribune of Cartersville reported considerable damage to trees and power lines throughout the county. At least one home suffered light damage when a tree fell on the structure. Around 1000 homes in the county were left without power for several hours. (Estimated Damage: \$150,000)

**Carroll:** The Times Georgian of Carrollton reported extensive and widespread damage to trees and power lines countywide. At least 80 trees were blown down. A mobile home in the Memory Springs Mobile Home Park lost its roof because of high winds. Nearly all of the inside possessions were lost as well. The home was considered a total loss. There were several other locations in the county where trees fell on homes. A tree fell on a home on Adamson Avenue causing major damage to the roof. Another resident reported that a large tree fell on and caused significant damage to their vehicle. (Estimated Damage: \$350,000)

**Chattooga:** The Summerville News reported that many trees and power lines were blown down throughout the county. One home in Summerville sustained damage when a large oak tree fell on the structure. Several homes sustained minor damage to roofs when trees fell on them. A fence was also blown down at another residence. A number of roads, including Lysterly Dam Road, had to be closed because of fallen trees. (Estimated Damage: \$250,000)

**Cherokee:** The Cherokee County Emergency Management Director and the Cherokee Tribune of Canton both reported extensive and widespread damage to trees, power lines, and structures throughout the county. Many roads were blocked from downed trees, including Georgia Highway 108, 369, and 372. In fact, Georgia Highway 372 remained closed for days because of the extent of debris left on the highway. Power lines were also down on a number of roads, especially in the Canton area. The most significant damage occurred in the Woodmont Subdivision, where several homes sustained minor damage from downed trees. (Estimated Damage: \$500,000)

**Clarke:** The Athens Banner Herald and the Clarke County Emergency Management Director reported that numerous trees and power lines were down throughout the county. Consequently, several roads were blocked. Two homes were damaged by downed trees and the St. Joseph Catholic School was damaged when a tree crashed through the roof. As many as 14,000 residents were left without power for several hours. (Estimated Damage: \$400,000)

**Clayton:** The Clayton Neighbor reported widespread damage to trees and power lines throughout the county. A man was injured when a tree limb fell on his head, and a pickup truck hit a large tree down on the road in Jonesboro. Around 37,500 people in the county were left without power for several hours. (Estimated Damage: \$250,000)

**Cobb:** The Marietta Daily Journal reported extensive and widespread damage to trees and power lines throughout the county. As many as 25,000 residents of the county were left without power for several hours during the afternoon and evening hours. One truck was heavily damaged when a large tree fell on the vehicle while it was being driven. No injuries were reported. (Estimated Damage: \$200,000)

**Coweta:** The Times/Herald of Newnan reported widespread damage to trees and power lines across the county. Some roads were blocked by downed trees and at least one home suffered damage when a tree fell on the structure. (Estimated Damage: \$150,000)

**Dade:** The Dade Sentinel of Trenton reported widespread damage to trees and power lines countywide. Hundreds of trees and dozens of power lines fell during the storm. 125 residences and 4 businesses were damaged. Many parts of the county were left without power for over 48 hours. (Estimated Damage: \$1,000,000)

**Dawson:** The Georgia Emergency Management Agency reported considerable damage to trees and power lines throughout the county. The downed trees caused damage to structures as well, with three site-built homes suffering major damage and three site-built homes suffering minor damage. As much as 35 percent of the county was left without power during the evening hours. (Estimated Damage: \$250,000)

**DeKalb:** The Atlanta Journal-Constitution reported that numerous trees and power lines were blown down around the county. A dozen homes were damaged by falling trees and related debris. One home just east of Decatur sustained significant damage when a large, 4-5 foot diameter oak tree fell on it. A tree also fell on a vehicle in the Virginia Highlands area. Much of the county lost power for several hours during the high winds. (Estimated Damage: \$350,000)

**Douglas:** The Douglas County Sentinel reported widespread damage to trees and power lines throughout the county. Dozens of trees and power lines were blown down throughout the county, leaving as much as 50 percent of the county without power for

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

several hours. Property damage was minimal, however. (Estimated Damage: \$150,000)

Fannin: The News Observer of Blue Ridge reported that a tremendous number of trees and power lines were blown down around the county. Two homes were destroyed by downed trees, while five other multi-family homes and two vehicles were damaged by downed trees. Three paved roads were also closed as they were blocked by fallen trees. At least 500 residents in the county lost power for many hours during the storm. (Estimated Damage: \$500,000)

Fayette: The Fayette County Emergency Management Director reported that a number of large trees were blown down throughout the county, many on power lines. A home in North Fayette county suffered extensive damage when a 75-foot oak tree crashed through the roof of the home. A traffic light was also blown down. Around the county, 22 roads were blocked from downed trees and/or power lines. Many parts of the county lost power for at least a few hours. Most of the high wind damage in the county took place during a heavy rain squall or spiral feeder band associated with Ivan. In the southeast part of the county, on the northwest side of Lake Horton, strong straight-lined winds associated with this rain squall blew down 15-20 large trees, mostly pine. The winds also picked up a gazebo and moved it several feet from its original location. Residents in the area claimed they saw a tornado or funnel cloud. However, a National Weather Service Damage survey conducted later concluded that the incident was straight-lined wind damage and not a tornado. (Estimated Damage: \$378,000)

Floyd: The Rome News Tribune reported that many trees and power lines were blown down around the county. One home was damaged when a tree fell through the roof. Around 5000 residents in the county were left without power for several hours. (Estimated Damage: \$200,000)

Forsyth: The Forsyth County News reported extensive and widespread damage to trees and power lines throughout the county. Hundreds of trees were blown down, many on power lines. Some roads were blocked. One business on Georgia Highway 9 was damaged by a fallen tree and a number of trees were down on Mount Tabor Road. A vehicle on Union Hill Road was damaged when a large pine tree fell on it. (Estimated Damage: \$250,000)

Fulton: Several Atlanta area newspapers reported massive damage to trees, power lines, and structures throughout the county. Hundreds of trees and dozens of power lines were down throughout the county. Several homes sustained damage when large trees fell on the structures and several vehicles were damaged. A man was injured when a tree fell on his vehicle on Piedmont Avenue. In the city of East Point alone, at least 35 trees were reported down and 30 percent of the homes were without power for several hours. Widespread power outages were reported countywide. (Estimated Damage: \$1,000,000)

Gilmer: The Times Courier of Ellijay and the Georgia Emergency Management Agency reported widespread damage to trees and power lines throughout the county. In addition, four poultry houses on Homer Wright Road were destroyed by high winds and the chickens were then swept away by flood waters. Tens of thousands of chickens were lost. (Estimated Damage: \$500,000)

Gwinnett: The Gwinnett Daily-Post of Lawrenceville reported that numerous trees and power lines were blown down throughout the county. Dozens of trees were blown down onto power lines, homes, and vehicles. At least 11 homes were damaged when trees fell on them. Approximately 58,000 residents of the county were left without power for several hours. Emergency officials reported that they received 104 reports of downed power lines during the afternoon and early evening. (Estimated Damage: \$750,000)

Hall: The Georgia Emergency Management Agency, The Times of Gainesville, and the public all reported extensive damage to trees and power lines throughout the county. Dozens of trees and power lines were blown down. Five site-built homes suffered major damage when trees fell on them, while one other home sustained minor damage from downed trees. Four roads were blocked and closed by downed trees. It was estimated that approximately five percent of the county was without power for several hours. (Estimated Damage: \$250,000)

Haralson: The Tallapoosa Journal reported that numerous trees and power lines were blown down throughout the county. Several roads were blocked and closed from fallen trees. Five homes were damaged by trees that fell on them, with minor to moderate damage reported. Approximately 1400 homes were left without power during the evening. (Estimated Damage: \$200,000)

Jackson: A damage survey conducted by the National Weather Service and the Jackson County Emergency Management Director concluded that strong 75-80 mph straight-lined winds associated with a rain squall or feeder band of Tropical Storm Ivan caused extensive damage in a small area of the town of Nicholson in eastern Jackson county. Seven large pecan and cedar trees were blown down and a couple of site-built homes sustained minor damage, mostly to the roofs. In addition, a vehicle was damaged on U.S. Highway 441 when a tree fell on it and one road in the area was blocked from downed trees. Nearly 20 trees were down altogether in this area. Elsewhere around the county, The Commerce News reported that a number of trees and power lines were down. A house in Commerce sustained damage when a large oak tree fell on it and there were reports of trees down on buildings and roads throughout the county. (Estimated Damage: \$250,000)

Lumpkin: The Georgia Emergency Management Agency and the Dahlonega Nugget reported extensive and widespread damage to trees and power lines throughout the county. Some structures were also damaged in the county. Several hundred trees were blown down or uprooted in the county. Many were large trees. 150-200 county roads were blocked by downed trees. One mobile home was destroyed, one site-built home sustained minor damage. In addition, one non-profit facility was destroyed. (Estimated Damage: \$500,000)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
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## **GEORGIA, North and Central**

**Monroe:** The Georgia Emergency Management Agency reported widespread damage to trees and power lines throughout the county. Some structures were damaged as well. One site-built home was destroyed and another received minor damage. Around 30 roads were blocked by downed trees. Nearly 21,000 people in the county lost power during the storm, including one of the county hospitals. (Estimated Damage: \$300,000)

**Morgan:** The Georgia Emergency Management Agency reported considerable damage to trees and power lines throughout the county. Some structures sustained damage as well. Numerous trees were down countywide. A manufactured home in Buckhead was damaged by a large tree that fell on it, one business sustained minor damage from a fallen tree, and downed trees also caused damage to one county building. From 15 to 20 roads were blocked by downed trees. (Estimated Damage: \$250,000)

**Muscogee:** The Columbus Ledger-Enquirer reported that many trees and power lines were down around the county. High winds overturned a delivery truck on Schomburg Road. A large tree fell on and damaged the gate at the Bibb Mill Complex on First Avenue. Thirteenth Street was blocked when a large tree fell across the road. (Estimated Damage: \$150,000)

**Paulding:** The Paulding County 911 Center and the Georgia Emergency Management Agency reported that a number of trees and power lines were down throughout the county. A large tree limb fell on and damaged an old car in Dallas. Two paved roads were closed because of downed trees. At one residence in Dallas, the public reported that the high winds blew over a heavy outdoor swing set and several small trees. Twenty percent of the county was left without power for several hours. (Estimated Damage: \$50,000)

**Pickens:** The Georgia Emergency Management Agency reported that dozens of trees and power lines were down throughout the county. Trees took down many power lines and put the Bent Tree's Treatment Plant and main pumping station out of commission. One home sustained significant damage when a large oak tree fell on it. Approximately 3500 residents in the county were left without power for several hours. (Estimated Damage: \$250,000)

**Pike:** The Pike County Journal and Reporter of Zebulon reported that dozens of trees and power lines were blown down throughout the county. Many roads were blocked by downed trees. An auto accident occurred when a tree was hit that had fallen down in the road. Much of the county was left without power, in some areas for as much as 18 hours. (Estimated Damage: \$250,000)

**Polk:** The Polk County Emergency Management Director, as well as the Rome News Tribune and the Cedartown Standard, reported widespread wind damage across the county. Numerous trees and power lines were down throughout the county. Minor damage was reported to several homes, mostly in the form of roof damage. A number of roads were blocked by the downed trees. (Estimated Damage: \$150,000)

**Oconee:** The Georgia Emergency Management Agency reported that many trees and power lines were blown down. One mobile home was destroyed and one site-built home sustained major damage. A 12-year old girl was trapped in the site-built home when it was damaged, but she did not suffer any injuries. Hundreds of trees were down around the county and at least 100 trees had to be cleared from roadways. As much as half of the county was left without power for several hours. (Estimated Damage: \$350,000)

**Oglethorpe:** The Oglethorpe Echo of Lexington reported widespread damage to trees and power lines throughout the county. Damage to structures was also reported. From 30 to 40 roads were blocked from downed trees. The United Pentecostal Church sustained damage when winds ripped off a portion of the metal roof. The damaged roof allowed water to get into the facility causing additional damage. Several homes sustained minor damage from wind and downed trees. At one residence a boat was damaged when it was blown into trees bordering the property. (Estimated Damage: \$250,000)

**Rockdale:** The Georgia Emergency Management Agency reported that many trees and power lines were down throughout the county. Numerous trees were blown down, knocking down power lines and leaving many residents in the county without power. Damage to homes was quite extensive. Thirty-five site-built homes suffered minor damage, ten mobile homes suffered minor damage, and two businesses sustained minor damage. (Estimated Damage: \$350,000)

**Spalding:** The Griffin Daily News reported widespread damage to trees and power lines throughout the county. A large oak tree fell and damaged a vehicle, a home, and uprooted the adjacent sidewalk. A Georgia Highway Department patrol car was destroyed by a large tree which fell on it. Another large tree fell and knocked out a fuel pump which supplied gasoline to Griffin city vehicles. (Estimated Damage: \$250,000)

**Towns:** The Georgia Emergency Management Agency reported extensive and widespread damage to trees and power lines throughout the county. Hundreds of trees were down countywide, leaving roads blocked and as much as 75 percent of the county without power, which involved nearly 18,000 residents. A 51-year old man was killed while working on downed power lines. (Estimated Damage: \$350,000)

**Troup:** The Georgia Emergency Management Agency and the Hogansville Home News reported that numerous trees and power lines were blown down throughout the county. Dozens of trees were blown down around the county, some blocked roads. Power lines were also down throughout the county. At least three homes suffered damage from downed trees and a traffic light was blown down on Whitesville Road and destroyed. Approximately 10,000 residents of the county were left without power for many hours. (Estimated Damage: \$300,000)

**Union:** The Georgia Emergency Management Agency and the North Georgia News of Blairsville reported that hundreds of trees

# Storm Data and Unusual Weather Phenomena

September 2004

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## **GEORGIA, North and Central**

and power lines were blown down throughout the county with estimated wind gusts of 50 to 70 mph. Widespread damage to trees, structures, and power lines was observed. Dozens of roads were closed. In one area on Flat Rock Gap Road, dozens of trees and power lines were down blocking the roads in most directions. Several residents in this area were trapped in their homes without power. The Brasstown Bald Visitor Center and the Lake Windfield Scott Recreation Area sustained damage and were closed. As much as 40 percent of the county was left without power. One resident recorded wind gusts of 60 mph around 730 pm EDT. (Estimated Damage: \$500,000)

Upson: The Georgia Emergency Management Agency and the Thomaston Times reported significant damage throughout the county from downed trees and power lines. Silvertown, alone, sustained major damage. Four massive century-old oak trees fell onto homes in Silvertown causing major damage to three homes. Another home in Thomaston was damaged from a tree as well. At least four roads in the county were closed as they were blocked from downed trees. A number of residents were left without power during the afternoon and evening. (Estimated Damage: \$500,000)

Walker: The Georgia Emergency Management Agency reported widespread damage from downed trees throughout the county. Hundreds of trees were blown down, leaving dozens of roads blocked. Some minor structural damage was also reported, when trees fell on them. (Estimated Damage: \$250,000)

Walton: The Atlanta Journal-Constitution reported that damage to trees and power lines was widespread throughout the county. While no homes were reported to have been damaged, approximately 20,000 residents were left without power, which is about 1/3 of the population of the county. (Estimated Damage: \$150,000)

White: The Georgia Emergency Management Agency reported that dozens of trees and power lines were down throughout the county, blocking roads and knocking out power to many areas. Wind gusts of 50 mph were observed at Blackstock Vineyards, but higher wind gusts were possible elsewhere. (Estimated Damage: \$250,000)

**GAZ003-005-052-  
057>058-067-070-081-  
092-095-104**

**Catoosa - Murray - Heard - Henry - Butts - Meriwether - Lamar - Crawford - Schley - Houston - Sumter**

<b>16</b>	<b>1130EST</b>	<b>0</b>	<b>0</b>	<b>327K</b>	<b>Strong Wind</b>
	<b>1900EST</b>				

All of the events below are associated with winds that met "strong wind" criteria during Hurricane Ivan.

Butts: The Jackson Progress Argus reported that several trees and power lines were blown down around the county. A large oak tree fell on First Street in Jackson demolishing three cars and causing damage to a fourth. The tree also punctured the roof of a home on the same street. Approximately 10 percent of the county was left without power. (Estimated Damage: \$150,000)

Catoosa: The Catoosa County News of Ringgold reported that several trees were blown down within the county. (Estimated Damage: \$5,000)

Crawford: The Georgia Post of Roberta reported that a few trees and power lines were blown down around the county. (Estimated Damage: \$5,000)

Lamar: The Barnesville Gazette reported that several trees were blown down across the western portion of the county. Some of the trees were down on power lines as well. A few trees were also down in the Barnesville area. (Estimated Damage: \$15,000)

Heard: The LaGrange Daily News reported that some trees were blown down in the county. Damage was minimal. (Estimated Damage: \$5,000)

Henry: The Henry Neighbor reported that a few trees were down. A road sign was also knocked down by the high winds. (Estimated Damage: \$5,000)

Houston: The Georgia Emergency Management Agency reported that winds caused minor damage to one site-built home and one non-profit facility. (Estimated Damage: \$5,000)

Meriwether: The Manchester Star Mercury reported that several trees and power lines were blown down throughout the county. (Estimated Damage: \$50,000)

Murray: The Chatsworth Times reported that a few trees were down around the county. One tree was down on Georgia Highway 2 and another was on Leonard Bridge Road. (Estimated Damage: \$7,000)

Schley: The Georgia Emergency Management Agency reported that one site-built home and one mobile home sustained minor damage. Approximately 100 people were left without power. (Estimated Damage: \$25,000)

Sumter: The Americus Times/Recorded reported that several trees were blown down throughout the county. Overall damage was minor. However, one home sustained moderate damage when a tree fell on the home piercing the roof of the living room.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **GEORGIA, North and Central**

(Estimated Damage: \$50,000)

### **Madison County**

**1 NNE Colbert to  
.5 WNW Danielsville**

**16 1405EST 7 150 0 0 1.3M Tornado (F1)**  
**1415EST**

A damage assessment conducted by the National Weather Service and the Madison County Emergency Management Director concluded that a 7-mile long path, 150-yard wide, F1 tornado with near 100 mph winds was spawned by the remnants of Tropical Storm Ivan causing major damage to several large homes in a country club, along with extensive damage to trees and power lines along its path. The tornado began just south of Georgia Highway 72, just east of Colbert, near the intersection of Walnut Grove Church Road and Kingston Road and continued moving north-northwest around 40 mph, terminating near the Madison County High School on Georgia Highway 98, just west of Danielsville. The most significant damage occurred along the southern part of the storm's path in the Kingston Road Subdivision/Country Club. Here, around five homes sustained major to extensive damage, while approximately another 20 homes sustained minor to moderate damage. In addition, widespread damage to trees and power lines was observed along the path of the tornado. Damage to the windward side of the roofs on several homes was consistent with a tornado circulation.

### **Carroll County Countywide**

**16 1408EST 0 0 30K Flash Flood**  
**1700EST**

The Carroll County Emergency Management Director reported severe flooding throughout the county. Rainfall of 6 to 8 inches was common throughout the county during the afternoon hours. At least 30 roads around the county were flooded and closed. Lake Paradise Road was closed indefinitely when flood waters ripped away a large portion of one lane of the road which runs above a creek.

### **Coweta County Countywide**

**16 1430EST 0 0 20K Flash Flood**  
**1630EST**

The Coweta County Sheriff's Office reported that heavy rain squalls, associated with the remnants of Tropical Storm Ivan, forced the closure of several roads in Newnan with up to one foot of water flowing over several roads. Many roads were under water throughout the county. Rainfall reports from citizens around the county showed rainfall amounts from four to over seven inches during the afternoon hours.

### **Madison County Paoli to 1 NNW Paoli**

**16 1433EST 1 50 0 0 50K Tornado (F0)**

A damage assessment conducted by the National Weather Service and the Madison County Emergency Management Director concluded that a short-lived, F0 tornado, associated with the remnants of Hurricane Ivan, touched down near Paoli at the intersection of New Hope Church Road and Paoli New Towns Road and travelled north-northwest at 40 mph along a one-mile long broken path terminating near Collins Brooks Road. One barn was completely destroyed along the path and several homes sustained minor structural damage. Numerous trees were topped along the path of the tornado.

### **Haralson County Countywide**

**16 1440EST 0 0 5K Flash Flood**  
**1730EST**

The Haralson County 911 Center reported that several roads were flooded, especially across the eastern portion of the county.

### **Upson County 5 N Yatesville to 5.1 N Yatesville**

**16 1442EST 0.1 50 0 0 0.50K Tornado (F0)**

The Upson County Emergency Management Director reported that a short-lived and weak F0 tornado, associated with the remnants of Tropical Storm Ivan, touched down in extreme northeast Upson county near the Lamar county line. The tornado occurred in a rural area and as a result, only a few trees were damaged. There was a convergent pattern evident in the damage consistent with a tornado. Doppler radar also supported a tornadic circulation in this area.

### **Clayton County Countywide**

**16 1500EST 0 0 10K Flash Flood**  
**1700EST**

The Clayton County Emergency Management Director reported that 31 roads were flooded and closed. Some of the roads sustained minor damage as a result. Major flooding occurred at the headwaters of the Flint River and various creeks which lead into the Flint river, all in far northern Clayton county near the Atlanta Hartsfield-Jackson International Airport. At least six homes in the Springs Subdivision just south of Jonesboro sustained extensive damage from flood waters. The Tara Mobile Home Park and Edmonson Mobile Home Park were flooded. The county Emergency Management Office had to evacuate 37 people in this area by boat. Some businesses in the area also sustained flood damage. Upper Riverdale Road was flooded with one to two feet of water flowing over the road, blocking an entrance to Southern Regional Hospital.

### **Douglas County Lithia Spgs**

**16 1500EST 0 0 1K Flash Flood**  
**1815EST**

The Douglas County 911 Center reported that flood waters from Sweetwater Creek caused flooding of Mt. Vernon Road. Around one foot of water was flowing over the road in this area.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

### Meriwether County

Countywide	16	1505EST 1715EST			0	0	5K		Flash Flood
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The Meriwether County 911 Center reported flash flooding throughout the county. Significant flooding was observed along Mill Pond Creek, which became a swift moving river during the afternoon. Several roads had water flowing over them and had to be closed.

### Talbot County

Countywide	16	1515EST 1915EST			0	0	0		Flash Flood
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The Talbot County 911 Center reported that Georgia Highway 80, leading out of downtown Talbotton, was flooded and closed.

### Spalding County

.5 SE Griffin Spaulding .4 SE Griffin Spaulding Ar	16	1521EST	0.2	50	0	0	250K		Tornado (F0)
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A damage survey conducted by the National Weather Service and the Spalding County Emergency Management Director concluded that a high end F0 tornado affected a small, 1/5-mile long and 50-yard wide path just southeast of the Griffin-Spaulding Airport near the intersection of Maddox and Etheridge Roads. Extensive damage to around one dozen large mature pecan trees was observed, along with minor damage to several surrounding trees in a residential neighborhood. Minor roof damage was also noted to several of the homes. Many of the trees were uprooted inward to the path showing convergence and consistent with high end F0 70 mph tornado damage.

### Cobb County

Countywide	16 17	1528EST 0145EST			0	0	1M		Flash Flood
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Numerous reports of widespread flooding were received from the public as rainfall from 6-10 inches fell across most of the county during the afternoon and evening. Many creeks were flowing several feet out of their banks in Acworth, Smyrna, Powder Springs, Marietta, and other areas in the county. Significant flooding was reported on Indian River Creek and Story Creek, which was five feet out of its banks. Many roads were flooded also, especially U.S. Highway 41 in Marietta where water was up to the bottom of cars. This flooding was a result of moderate flooding on nearby Sope Creek. In Smyrna, a foot of water was flowing across Atlanta Road at Spring Street. A number of roads in the county, especially the northern areas, sustained damage. Some neighborhoods in Smyrna were reported to be almost completely under water with minor damage to a number of homes. Many yards were flooded in Powder Springs, with up to six feet of water in some streets. Sope Creek went above its flood stage of 12 feet at 545 pm EDT, crested at 17.5 feet around 11 pm EDT, and the fell below flood stage at 245 am EDT on September 17th.

### Fayette County

Countywide	16	1546EST 1800EST			0	0	25K		Flash Flood
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The Georgia Emergency Management Agency reported that several roads in the county were briefly flooded as 4-5 inches of rain fell across the county during the afternoon and early evening hours. Four residences suffered minor flood damage. A trained spotter for the National Weather Service reported that many of the golf cart paths in Peachtree City were flooded with swift flowing water over the paths. In addition, several creeks and streams in Peachtree City were out of their banks. Furthermore, New Hope Road west of Brandon Mill Circle was flooded and impassable.

### Pike County

Countywide	16	1610EST 1745EST			0	0	5K		Flash Flood
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The Pike County 911 Center reported that several roads were flooded with up to a foot of water flowing over some of these roads.

### Wilkes County

.5 S Tignall to 1.5 N Norman	16	1610EST	7	500	0	0	1.5M		Tornado (F1)
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A damage assessment conducted by the Wilkes County Emergency Management Director indicated that an F1 tornado, briefly at the high end of the F1 scale, touched down just south of Tignall near Georgia Highway 17 and continued north from six to seven miles along or just west of Georgia Highway 17 to just north of Norman. The path width of the tornado was mostly between 100 and 200 yards, but briefly was up to 500 yards wide between Mallorysville and Georgia Highway 17. The tornado was believed to have been on the ground from 70 to 80 percent of the time along its path. Large trees were uprooted on six single-family dwellings in the Tignall area and several other dwellings were damaged in Norman. All together 23 structures sustained damage from the tornado, ranging from very minor to major. Numerous trees and power lines were blown down, twisted, or uprooted along the path, many causing additional damage to farm fences along the way. A large communications tower was also destroyed. Georgia Highway 17 was blocked in two places along the path by downed trees and three county dirt roads were also blocked along the path. At least 1000 residents in the area lost power and phone service during the event.

### Rockdale County

Countywide	16	1630EST 1845EST			0	0	50K		Flash Flood
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The Rockdale County Emergency Management Director reported minor flooding in the Capri Subdivision near the headwaters of the Yellow River. Several roads were flooded and several homes sustained minor damage as a result.

# Storm Data and Unusual Weather Phenomena

September 2004

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## GEORGIA, North and Central

### **Spalding County**

#### **Countywide**

**16 1630EST** **0 0 50K** **Flash Flood**  
**1900EST**

The Griffin Daily News reported significant flooding across much of the county. A number of roads were flooded and rendered impassable. Old Atlanta Road was submerged by flood waters at two intersections. The Main Street Players headquarters building in Griffin sustained damage from flooding.

### **Cherokee County**

#### **Countywide**

**16 1645EST** **0 2 1M** **Flash Flood**  
**2045EST**

The Cherokee County Emergency Management Director, as well as many reports from the public, indicated that extensive and widespread flooding was occurring throughout much of Cherokee county as rainfall on the order of 10 inches or more fell throughout the county during the afternoon and early evening hours. Many roads were flooded and closed. Several roads were washed out and rendered impassable. Several homes and businesses were flooded as well. A car was swept 250 yards down an un-named creek flowing under Water Tank Road. The creek rose over 10 feet out of its banks. The creek is usually only about one foot deep. The single occupant of the vehicle was rescued by emergency personnel without injury. In another incident, a Sheriff's Deputy narrowly escaped from her patrol vehicle as it was swept down a swollen stream. She was attempting to set up a road block because of road flooding. She was able to escape through one of the windows and to the safety of a tree. Major flooding was observed on the upper branch of Town Creek in Canton. Several buildings were washed into the road by the creek as it reached its 100-year flood plain extent. Two residents of the county were injured during the flash floods.

### **De Kalb County**

#### **Countywide**

**16 1645EST** **0 0 5M** **Flash Flood**  
**17 0430EST**

Numerous reports were received from the DeKalb County Emergency Manager, the media, and the public of extensive flooding across much of the Atlanta metropolitan area, especially the northern parts of the county. Widespread flooding of roads, streets, and highways was reported throughout the county, several of which had to be closed. Many homes, businesses, property and vehicles across the county were flooded during this event. Major flooding was reported in many areas of the central and northern parts of the county, specifically between Interstates 20 and 285. Some of these areas experienced catastrophic and historical flooding, with some of the worst flooding observed in nearly 100 years. National Weather Service river gages showed that Peachtree Creek and Nancy Creek quickly rose to record flood levels during the late evening hours. Peachtree Creek rose above its flood stage of 17 feet at 545 pm EDT, then went into record flood stage at 845 pm EDT, then fell below flood stage between 5 and 6 am EDT September 17th. The river crested at 22.7 feet, which is 5.7 feet above flood stage and 1.5 feet above the record flood stage of 21.1 feet, previously reached in 1990. The river gage on Peachtree Creek was washed away during this event. Hundreds of residents along and near Peachtree Creek had to be evacuated, some by boat. Twenty-five to 50 homes and several apartment complexes, including the Peachtree Apartments, were impacted by the flood waters, many sustaining significant and extensive damage. Record flooding was also observed on Nancy Creek, which reached its 11 foot flood stage at 600 pm EDT, reached a record flood stage of 15 feet at 1130 pm EDT, then fell below flood stage around 4 am EDT September 17th. The impact in this area was similar to that near Peachtree Creek, with dozens of homes flooded and many residents having to be evacuated. In Decatur, one home was devastated when the waters of Peavine Creek rose over two feet in the basement of one home. A number of sinkholes were left in the county after the flooding receded, the largest being a 65 by 25 foot sinkhole on Durret Way in Dunwoody.

### **Fulton County**

#### **Countywide**

**16 1645EST** **0 0 20M** **Flash Flood**  
**17 0430EST**

Numerous reports were received from the Fulton County Emergency Manager, the media, and the public of extensive flooding across much of the Atlanta metropolitan area, especially the northern part of the county. Widespread flooding of roads, streets, and highways was reported throughout the county, several of which had to be closed. Many homes, businesses, property, and vehicles across the county were flooded during the event. However, major flooding was reported in many areas of the central and northern part of the county, specifically between Interstates 20 and 285. Some areas experienced catastrophic and historical flooding, with some of the worst flooding reported in nearly 100 years. National Weather Service river gages showed that Peachtree Creek and Nancy Creek quickly rose to record flood levels during the late evening hours. Peachtree Creek rose above flood stage of 17 feet at 545 pm EDT, went into record flood stage at 845 pm EDT, and fell below flood stage between 5 and 6 am EDT September 17th. The river crested at 22.7 feet, which is 5.7 feet above flood stage and 1.5 feet above the record flood stage of 21.1 feet, previously reached in 1990. The river gage at Peachtree Creek was washed away during this event. Hundreds of residents along and near Peachtree Creek and to be evacuated, some by boat. At least 50 homes in this area were impacted by the flood waters, many sustaining significant and extensive damage. Record flooding was also observed on Nancy Creek, which rose above its flood stage of 11 feet at 600 pm EDT, reached a record flood stage of 15 feet at 1130 pm EDT, then fell below flood stage around 4 am EDT September 17th. The impact in this area was similar to that near Peachtree Creek with dozens of homes flooded and many residents having to be evacuated. Moderate flooding also occurred on Procter Creek, west of Atlanta. The creek went into flood at 515 pm EDT, crested at 14 feet around 630 pm EDT, then fell below flood stage around 7 pm EDT. Hortense Way at Northwest Place was completely flooded as a result. At least a dozen homes and apartments were also flooded in this area. Several residents lost all of their possessions. The Chattahoochee River also rose to major flood levels within 6 to 12 hours, but this fell more into the category of main stem river flooding instead of flash flooding.

# Storm Data and Unusual Weather Phenomena

September 2004

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					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

### Cherokee County

2 WSW Orange to 2 WNW Orange      16      1655EST  
1656EST      1      400      0      4      300K      Tornado (F1)

The Cherokee County Emergency Management Director reported that a brief F1 tornado occurred at the end of a path of extensive damage caused by strong straight-lined winds. The tornado touched down near Georgia Highway 20, also known as Cumming Highway, near the town of White City about 8 miles east of Canton. The tornado continued north to north-northwest, roughly centered along Jack Page Lane, for about 1 mile before lifting. The damage path was determined to be approximately 400 yards wide. Dozens of trees were blown down in this area in a convergent pattern. Four people were injured on Georgia Highway 20 when trees fell on their vehicles during the tornado. North of Georgia Highway 20 and mostly west of Jack Page Lane, six homes suffered extensive damage, mostly from fallen trees.

### Gwinnett County Countywide

16      1655EST      0      0      100K      Heavy Rain

Heavy rain, on the order of 4-6 inches during the afternoon, caused the roof of a distribution center to collapse and caused a partial roof collapse at an apartment building.

### Gwinnett County South Portion

16      1730EST  
2315EST      0      0      10K      Flash Flood

Spotters with the Gwinnett County SkyWarn program reported widespread flooding across much of the county. The most significant flooding was occurring in the Norcross and Grayson areas where water was two feet over the road in places. The Yellow River rose several feet out of its banks. Holcolmb Bridge Road was flooded and closed.

### Forsyth County Countywide

16      1745EST  
2315EST      0      0      250K      Flash Flood

The Forsyth County Emergency Management Director, as well as several reports from the public, indicated that significant flooding was occurring across much of the county. The Etowah River rose to 15 feet, five feet above its 10 foot flood stage. This caused minor damage to Old Federal and Nicholson Roads. In addition, a portion of Cambridge Hills Drive was washed out. Wildcat Creek just northeast of Chestatee rose well out of its banks with reported rainfall in the area of 5 inches per hour. Three residents of the county had to be rescued from their vehicles by county emergency crews in rising flood waters. The telephone company lost a distribution box that was inundated by flood waters causing an estimated \$100,000 in damage. Near major flooding occurred along Big Creek from Cumming southwest to the Fulton county line. Big Creek crested at 12 feet, which is five feet above its flood stage of seven feet. The public reported that several homes in Cumming suffered minor damage from flooding.

### Catoosa County Countywide

16      1842EST  
17      0045EST      0      0      150K      Flash Flood

The Catoosa County News of Ringgold reported that major flooding was observed across the county in association with the heavy rain from the remnants of Hurricane Ivan. At least 18 roads were closed because of flooding and several evacuations from high water were required, even a few by boat. Chickamauga Creek rose well above its flood stage, causing flooding of nearby property. In addition, at least five intersections in Ringgold were completely submerged by flood waters.

### White County Countywide

16      1842EST  
17      0415EST      1      0      300K      Flash Flood

The Georgia Emergency Management Agency, along with local newspapers, reported extensive and widespread flooding across White county. A six-year old girl, was swept away in flood waters, while outside in the front yard of her mobile home. The mobile home park was flooded by the waters from a nearby small stream. In unrelated incidents, three other residents had to be rescued from high water elsewhere in the county. Several roads were washed out. A 20-foot portion of Black Road was washed away by flood waters. The Chattahoochee River in Helen also rose above its flood stage of 6 feet and crested near 7 feet around 1130 pm EDT. The Castle Inn of Helen experienced flooding up to the patio level, which affects the basement area of the facility. F6OU

### Dawson County Countywide

16      1845EST  
17      0045EST      0      0      250K      Flash Flood

The Georgia Emergency Management Agency reported that significant flooding was reported across many areas of Dawson County. Four mobile homes were flooded, two bridges were breached because of flood waters, six culverts were washed away or damaged, and one dam was breached. Several roads throughout the county were flooded and closed as well.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, North and Central

### **Gilmer County**

#### **Countywide**

**16 1846EST**  
**17 0045EST**  
**0 0 2.8M Flash Flood**

The Gilmer County Emergency Manager, along with local newspapers and the public, reported extensive, and widespread to catastrophic flooding throughout much of the county. More than a foot of rain fell in parts of Gilmer county in association with the remnants of Hurricane Ivan during a six to eight hour period in the afternoon and evening hours of September 16th. Ten to 12 inches of rain was common across the county. Catastrophic flooding was reported along the Cartecay River, which in some areas exceeded the 500-year flood plain level. Several homes and vehicles were washed away when the river reached these levels. Major flooding was also reported on the Coosawattee River and Cox Creek as well. Several homes and vehicles along the banks of the Coosawattee River were also washed away. The Coosawattee River crested at 17.3 feet around midnight on the 17th, which is several feet above bankfull. All together across the county, 35 homes were flooded or destroyed, 12 to 18 mobile homes in the Maple Village Mobile Home Park were either destroyed or washed away by flooding, at least five recreational vehicles and several other vehicles were swept away by flood waters. Fourteen families in the county lost everything to the floods. Roads and bridges also suffered significant structural damage. Three bridges were washed away or suffered major damage, including Clear Creek Bridge which collapsed. A 25 foot section of the driveway leading from Georgia Highway 282 to the Courier Dye plant was washed away. Other buildings and locales suffered damage from the extensive flooding, including the Ellijay Lions Building, a Civil War Memorial, and another Veterans Memorial.

### **Lumpkin County**

#### **Countywide**

**16 1900EST**  
**17 0045EST**  
**0 0 150K Flash Flood**

The Dahlonega Nugget reported that significant flooding was observed throughout the county causing damage to roads and other property. The most significant flooding occurred along the Chestatee River, which exceeded its banks by several feet and flooded Georgia Highway 52. A portion of Nimblewill Church Road and Sheep Wallow Road were washed out. Three other roads had to be closed because of flooding.

### **Banks County**

#### **Countywide**

**16 1930EST**  
**2130EST**  
**0 0 50K Flash Flood**

The Banks County News of Homer reported significant flash flooding throughout the county, which flooded streets and bridges and washed out several roads. At least one mudslide was also reported. A five-foot cross section of a road along Wofford Creek was washed out and parts of the Banks County Recreation Park were completely under water.

### **Bartow County**

#### **Countywide**

**16 1930EST**  
**17 0045EST**  
**0 0 5K Flash Flood**

The Daily News Tribune of Cartersville reported minor to moderate flooding around the county. There were isolated reports of road flooding. Small stream flooding was the most flood-related problem in the county. Two mobile homes suffered damage from flooding and one bridge was damaged by flood waters. Many docks, campgrounds, beaches, and boat ramps at Lake Allatoona were flooded.

### **Pickens County**

#### **Countywide**

**16 1930EST**  
**17 0045EST**  
**0 0 100K Flash Flood**

The Georgia Emergency Management Agency and the Pickens County Progress of Jasper reported that flash flooding was widespread and extensive across the county. Several roads were washed out from flash flooding, including portions of Georgia Highway 136. Numerous other roads in the county were flooded and closed as well. Whole sections of pipeline along some roads were washed out, including about 100 feet of a water line. Around 12 bridges and culverts in the county were damaged from flood waters and had to be inspected. The public also reported significant flooding in many areas of the county as well.

### **Towns County**

#### **Countywide**

**16 1930EST**  
**17 0045EST**  
**0 0 500K Flash Flood**

The Georgia Emergency Management Agency, along with local newspaper, reported major and extensive flooding throughout the county. The Hiawassee River flooded the Enchanted Valley Resort. Many residents in the area had water up to the doors of their homes. At least ten roads and ten bridges in the county were washed out by flood waters.

### **Union County**

#### **Countywide**

**16 1930EST**  
**17 0045EST**  
**0 0 250K Flash Flood**

The Georgia Emergency Mangement Agency, and local newspapers, reported significant flooding across much of the county as anywhere from five to nine inches of rain fell during the afternoon and evening hours. Several roads were blocked from flooding and/or mudslides. Three bridges were washed out. Flash flooding forced the rescues of seven people and three animals from their homes in the Twin Pond and Pegasus Landing areas.

### **Whitfield County**

#### **Countywide**

**16 1930EST**  
**17 1930EST**  
**0 0 26K Flash Flood**

A National Weather Service SkyWarn spotter and cooperative observer, along with the Georgia Emergency Management Agency, reported considerable flooding throughout the county. A number of creeks exceeded bank full and several roads were flooded. Several cars were abandoned in high water. A few roads were washed out, most notably Old Tilton Road which was completely washed out and expected to remain closed for at least two weeks.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## GEORGIA, North and Central

**GAZ001>009-011>016-019>025-027-030>039-041>062-066>076-078>086-089>098-102>113**

**Dade - Walker - Catoosa - Whitfield - Murray - Fannin - Gilmer - Union - Towns - Chattooga - Gordon - Pickens - Dawson - Lumpkin - White - Floyd - Bartow - Cherokee - Forsyth - Hall - Banks - Jackson - Madison - Polk - Paulding - Cobb - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Haralson - Carroll - Douglas - South Fulton - De Kalb - Rockdale - Walton - Newton - Morgan - Greene - Taliaferro - Heard - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Hancock - Warren - Troup - Meriwether - Pike - Upson - Lamar - Monroe - Jones - Baldwin - Washington - Glascock - Jefferson - Harris - Talbot - Taylor - Crawford - Bibb - Twiggs - Wilkinson - Johnson - Emanuel - Muscogee - Chattahoochee - Marion - Schley - Macon - Peach - Houston - Bleckley - Laurens - Treutlen - Stewart - Webster - Sumter - Dooly - Crisp - Pulaski - Wilcox - Dodge - Telfair - Wheeler - Montgomery - Toombs**

26	0000EST	0	0						Tropical Storm
28	1200EST								

Hurricane Jeanne was the third major southeast U.S. land falling hurricane to affect Georgia within a three week period, following just 10 days after Hurricane Ivan, which followed just 10 days after Hurricane Frances. Jeanne caused the least damage to north and central Georgia counties of the three tropical systems to affect the state during the month of September. High winds were limited mainly to the southeast portions of middle Georgia and flooding rains were limited to the Atlanta area and south middle Georgia counties. No tornadoes were observed with Jeanne as the favorable tornado-producing spiral feeder bands remained well east over the Carolinas and western Atlantic. Hurricane Jeanne developed on September 13th from a tropical wave over the Leeward Islands. Jeanne moved slowly across the Virgin Islands and Puerto Rico on the 15th, then slowly over the Dominican Republic and Haiti the 16th and 17th. Most of this time, the storm maintained only strong tropical storm strength. Jeanne then took a northward turn on the 18th and moved across the southeastern Bahamas as a tropical storm. From this point, Jeanne meandered through a slow clockwise loop from the 20th through 23rd, when the loop was finally completed. During this time the storm strengthened to a category two hurricane. Jeanne then began a slow westward track on the 23rd and strengthened to a category three hurricane. The storm then made landfall on the 25th, just north of West Palm Beach, Florida, at almost the exact same location as Hurricane Frances had done 20 days prior. Jeanne weakened to a tropical storm as it turned north-northwest across central Florida on the 26th and then weakened into a tropical depression as it moved into southern Georgia early on the 27th. The storm tracked from near Valdosta during the early morning hours of the 27th, reaching Macon around sunset on the 27th, then accelerating into northeast Georgia near Athens by midnight and out of the state early on the 28th. High winds of 35 to 40 mph with some higher gusts were confined mainly to the central and southeast portions of middle Georgia, roughly southeast of a line from Macon to Sandersville. Rainfall of 4-6 inches was also common in much of middle Georgia, but flooding problems observed in these areas were minor. However, during the evening, a deformation zone developed on the northwest side of the center of circulation around Jeanne over the Atlanta metropolitan area. This unfortunately brought excessive rainfall of 4 to 8 inches to some of the same areas that received in excess of 10 inches of rain just 10 days prior with Ivan. Once again major to record flooding was observed along several creeks on the north side of Atlanta and subsequently the Chattahoochee River. Many homes that were in the stages of cleanup from Ivan, were severely impacted once again with major flooding. Overall damages from flooding and high winds were estimated at \$5,000,000.

**GAZ081>083-097-103>106**

**Crawford - Bibb - Twiggs - Laurens - Webster - Sumter - Dooly - Crisp**

27	0200EST 1400EST	0	0	195K					High Wind (G50)
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High wind damage, associated with Tropical Storm Jeanne, is listed below, in alphabetical order by county for those counties that "high wind" criteria was either met or assumed to be met.

**Bibb:** The Macon Telegraph reported that at least two dozen reports of downed trees and power lines were received. Approximately 600 people were left without power. A car sustained damage when it drove into a tree which had fallen on the road. No injuries or major damage was reported. (Estimated Damage: \$30,000)

**Crawford:** The Crawford County Sheriff reported that a number of trees were down in the county. (Estimated Damage: \$5,000)

**Crisp:** The Crisp County Sheriff reported that a number of trees were down in the county. (Estimated Damage: \$5,000)

**Dooly:** The Dooly County Sheriff reported that a good number of trees and power lines were down throughout the county. In addition, a tree fell on a home in Unidalla causing damage to the structure. (Estimated Damage: \$50,000)

**Laurens:** The Laurens County 911 Center reported that widespread and numerous trees were down throughout the county. Some power lines were down as well. (Estimated Damage: \$25,000)

**Sumter:** The Americus Times/Recorder reported widespread damage to trees and power lines throughout the county. One home sustained damage when a large tree fell on the front porch and adjacent power lines. (Estimated Damage: \$50,000)

**Twiggs:** The Twiggs County 911 Center reported that numerous trees and power lines were down throughout the county. (Estimated Damage: \$25,000)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## GEORGIA, North and Central

**GAZ008-014-016-022>025-027-033>039-043>045-047>051-053>055-055>060-062-067-069-071-073>076-080-084-086-091>095-107>110-112>113**

Webster: The Webster County 911 Center reported that at least 20 trees were down within the county. (Estimated Damage: \$5,000)

**Union - Dawson - White - Forsyth - Hall - Banks - Jackson - Madison - North Fulton - Gwinnett - Barrow - Clarke - Oconee - Oglethorpe - Wilkes - Douglas - South Fulton - De Kalb - Walton - Newton - Morgan - Greene - Taliaferro - Coweta - Fayette - Clayton - Spalding - Henry - Butts - Jasper - Putnam - Warren - Meriwether - Upson - Monroe - Baldwin - Washington - Glascock - Jefferson - Taylor - Wilkinson - Emanuel - Marion - Schley - Macon - Peach - Houston - Pulaski - Wilcox - Dodge - Telfair - Montgomery - Toombs**

27	0530EST 2100EST	0	0	758.3K	Strong Wind
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Strong wind damage, associated with Tropical Storm Jeanne, is listed below in alphabetical order by county for those counties that "strong wind" criteria was either met or assumed to be met.

Baldwin: The Baldwin County Sheriff, along with the Union Recorder or Milledgeville reported that several trees were down around the county, some on roads. A couple of roads were closed. Scattered power outages were also reported. (Estimated Damage: \$10,000)

Banks: The Banks County Emergency Management Director reported that three trees and one power line were down in the county. (Estimated Damage: \$2,000)

Barrow: The Barrow County 911 Center reported that a few trees were down in the county. (Estimated Damage: \$1000)

Butts: The Butts County 911 Center reported that four trees were down in the county. (Estimated Damage: \$1,000)

Clarke: The Athens Police Department reported that around 12 trees were down in the county. (Estimated Damage: \$3,000)

Clayton: The News Daily of Jonesboro and the Clayton Neighbor reported that several trees and power lines were down around the county. Several homes were damaged when trees fell on them or against them. One home in Riverdale sustained significant damage when a large oak tree fell on the home causing damage to the roof, patio, and den. (Estimated Damage: \$150,000)

Coweta: The Times/Herald of Newnan reported that a number of trees and power lines were blown down throughout the county. Two homes and a vehicle on Newnan's south side were damaged when trees fell on them. (Estimated Damage: \$50,000)

Dawson: The Dawson County 911 Center reported that one tree was down on Georgia Highway 53 and was also down on a power line. Consequently, a number of residents in the county were left without power for up to 6 hours. (Estimated Damage: \$3000)

DeKalb: The DeKalb County 911 Center reported that several power lines were down around the county. The public reported that a large 75 foot oak tree fell on a residence in North Decatur. One tree was also down on Peachtree-Dunwoody Road. (Estimated Damage: \$15,000)

Dodge: The Dodge County 911 Center reported that a couple of trees were down in the county. (Estimated Damage \$500)

Douglas: An off-duty National Weather Service employee reported that a few trees were down on Georgia Highway 166 in the eastern portion of the county. (Estimated Damage: \$500)

Emanuel: The Emanuel County 911 Center reported that a few trees were down in the county. (Estimated Damage: \$1,000)

Fayette: The Fayette County 911 Center reported that several trees and a few power lines were down throughout the county. (Estimated Damage: \$10,000)

Forsyth: The Forsyth County 911 Center reported that one tree was down in Cumming. (Estimated Damage: \$250)

Fulton: The Atlanta Journal-Constitution, along with the South Fulton Neighbor, reported that a number of trees and power lines were blown down around the county. Power outages were widespread throughout the county. A large 150-year old oak tree fell on and caused significant damage to a home in East Point. (Estimated Damage: (Estimated Damage: \$150,000)

Glascock: The Glascock County 911 Center reported that several trees were down around the county. One tree fell on the main transmission line for the county knocking out power to the entire county for several hours. (Estimated Damage: \$25,000)

Greene: The Greene County 911 Center reported that several trees and some power lines were down around the county. (Estimated Damage: \$5,000)

Gwinnett: The Atlanta Journal-Constitution reported that several trees and power lines were blown down around the county causing scattered power outages. (Estimated Damage: \$10,000)



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

Hall: The Hall County 911 Center reported that a few trees were down in the county, including a couple of trees down on Georgia Highways 129 and 152 in Gillsville. (Estimated Damage: \$2000)

Henry: The Daily Herald of McDonough reported that strong winds blew down several trees and power lines in the county. Some power outages resulted. Two trees were down on homes causing minor damage. (Estimated Damage: \$15,000)

Houston: The Houston Home Journal of Perry reported that several trees and power lines were blown down. A pickup truck was damaged when a large pine tree fell on the vehicle. (Estimated Damage: \$30,000)

Jackson: The Jackson County 911 Center reported that several trees and some power lines were down in the county. (Estimated Damage: \$5,000)

Jasper: The Jasper County 911 Center reported that around 10 trees were down in the county, including one which fell on a power line. (Estimated Damage: \$5,000)

Jefferson: The Jefferson County 911 Center reported that a couple of trees were blown down in the county. (Estimated Damage: \$500)

Macon: The Macon County Sheriff reported that at least nine trees were down in the county. (Estimated Damage \$2,500)

Madison: The Madison County 911 Center reported that a few trees were down in the county. (Estimated Damage: \$1,000)

Marion: The Marion County 911 Center reported that a few trees were down in the county. (Estimated Damage: \$500)

Meriwether: The Meriwether County 911 Center reported that one tree and several limbs were down, especially in the Hogansville area. (Estimated Damage: \$500)

Monroe: The Monroe County 911 Center reported that a few trees were down around the county. (Estimated Damage: \$2,000)

Montgomery: The Montgomery County Sheriff reported that a few trees were blown down in the county. (Estimated Damage: \$1,000)

Morgan: The Morgan County 911 Center reported that four trees were blown down in the county. (Estimated Damage: \$1,000)

Newton: The Newton County 911 Center reported that three trees were down in the county. One small road was blocked as a result. (Estimated Damage: \$1,000)

Oconee: The Oconee County 911 Center reported that several trees were down in the county. (Estimated Damage: \$2,000)

Oglethorpe: The Oglethorpe County 911 Center reported that eight trees were down in the county. Several power lines were affected by the downed trees. (Estimated Damage: \$5,000)

Peach: The Peach County 911 Center reported that a couple of trees were down in the county. (Estimated Damage: \$500)

Pulaski: The Pulaski County Sheriff reported that a few trees were blown down around the county. (Estimated Damage: \$1,000)

Putnam: The Eatonton Messenger and the Union Recorder of Milledgeville reported that a few trees were blown down around the county. Some power outages were noted, especially in the northeastern part of the county. (Estimated Damage: \$5,000)

Schley: The Americus Times/Recorder indicated that several trees and power lines were down throughout the county. No significant damage was reported, however. (Estimated Damage: \$10,000)

Spalding: The Spalding County 911 Center reported that a few trees and power lines were down in the county. A couple of roads were blocked from downed trees. (Estimated Damage: \$5,000)

Taliaferro: The Advocate Democrat of Crawfordville reported that a few trees were blown down. One large pecan tree was down at a private residence in Crawfordville. (Estimated Damage: \$2,000)

Taylor: The Taylor County Sheriff reported that a few trees were down in the county. (Estimated Damage: \$1,000)

Telfair: The Telfair Enterprise of McRae and the Telfair County 911 Center reported that a few trees and power lines were down around the county. (Estimated Damage: \$5,000)

Toombs: The Toombs County 911 Center reported that a couple of trees were down in the county. (Estimated Damage: \$500)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

Union: The Union County 911 Center reported that one tree was blown down. (Estimated Damage: \$250)

Upson: The Upson County Emergency Management Director reported that a couple of trees and one power line were down. One road was temporarily blocked. (Estimated Damage: \$2,000)

Walton: The Walton County 911 Center reported that several trees and a few power lines were down throughout the county. (Estimated Damage: \$5,000)

Warren: The Warren County 911 Center reported that a few trees were down in the county. (Estimated Damage: \$500)

Washington: The Washington County 911 Center reported that several trees fell, a few on power lines. A number of residents were left without power during the day. (Estimated Damage: \$5,000)

White: The White County 911 Center reported that one tree was blown down. (Estimated Damage: \$250)

Wilcox: The Wilcox County 911 Center reported that a few trees were down in the county. (Estimated Damage: \$1,000)

Wilkes: The News Reporter of Washington indicated that a few trees were blown down around the county. (Estimated Damage: \$2,000)

Wilkinson: The Wilkinson County News of Irwinton reported that several trees and power lines were down around the county. Several roads were blocked and some residents were left without power much of the day. (Estimated Damage: \$50,000)

**GAZ032-035-038>039-050>051-053-055-057-060-069-072>073-081>082-094>095-105>106-109>110-112>113**

**Cobb - Barrow - Oglethorpe - Wilkes - Greene - Taliaferro - Coweta - Clayton - Henry - Putnam - Upson - Jones - Baldwin - Crawford - Bibb - Peach - Houston - Dooly - Crisp - Dodge - Telfair - Montgomery - Toombs**

27	0800EST	0	0	661K	Flood
28	0400EST				

General flooding (that which excludes flash flooding) or river flooding associated with Tropical Storm Jeanne, is listed below in alphabetical order by county.

Baldwin: The Baldwin county Sheriff and the Union Recorder of Milledgeville reported that up to 5 inches of rain fell throughout the county. Several creeks in the county were out of their banks causing some roads to be flooded.

Barrow: The Barrow County 911 Center reported that there was minor street flooding on several roads in the county.

Bibb: The Macon Telegraph reported that flooding was observed along the Ocmulgee River, which rose approximately eight feet in a 24 hour period. Some roads were also flooded, including the Interstate 75/Interstate 16 interchange.

Clayton: The public reported substantial flooding to roads and yards in the Riverdale area. Some creeks were out of their banks.

Cobb: The Chattahoochee River once again rose several feet above its flood stage, causing flooding of a number of homes in Cobb county, particularly in the Vinings area. Many of these same homes and areas were impacted by the record flooding from the remnants of Hurricane Ivan just 10 days prior. (Estimated Damage: \$500,000)

Coweta: The Times/Herald of Newnan reported that flooding was observed at the intersection of Georgia Highway 16 and U.S. Highway 29.

Crawford: The Crawford County Sheriff reported that a couple of minor dirt roads were washed out and closed because of flooding. (Estimated Damage: \$5,000)

Crisp: The Crisp County Sheriff reported that a number of county roads were flooded and some were even washed out. (Estimated Damage: \$25,000)

Dodge: The Dodge County 911 Center reported that several minor roads in the county were washed out. (Estimated Damage: \$50,000)

Dooly: The Dooly County Sheriff reported that a number of roads in the county were flooded from several hours of moderate to heavy rain. On Liberty Church Road, water was up to just one foot shy of the bridge.

Greene: The Herald Journal of Greensboro reported that several roads in the county were flooded and closed.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

Henry: The Daily Herald of McDonough reported that several small streams and creeks were out of their banks from heavy rain.

Houston: The public reported that Bay Gall Creek rose around one foot above bankful level and caused some minor flooding to at least one residence adjacent to the creek. (Estimated Damage: \$1,000)

Jasper: The Jasper County 911 Center reported that there was street flooding throughout the county. The worst flooding was occurring on Georgia Highway 83.

Jones: The Jones County Sheriff reported that several roads were flooded and some were closed.

Montgomery: The Montgomery County Sheriff reported that one road was washed out. (Estimated Damage: \$5,000)

Oconee: The Oconee County 911 Center reported minor flooding on several roads on the county.

Oglethorpe: The Oglethorpe County 911 Center reported that several roads in the county were flooded, with water up to eight inches deep in places. In addition, a dam on a small lake in Union Point failed. (Estimated Damage: \$5,000)

Peach: The Macon Telegraph reported that a portion of Peach Valley Road gave way during a period of several inches of rain causing a garbage truck to fall into an adjacent lake. (Estimated Damage: \$25,000)

Putnam: The Putnam County 911 Center reported that five roads in the county were flooded. Minor washout was reported on a few dirt roads in the county. Several inches of rain fell in the county during the day. (Estimated Damage: \$5,000)

Taliaferro: The Taliaferro County Sheriff reported that flooding was occurring throughout the county. Minor flooding was reported on several state roads and one county road was closed.

Telfair: The Telfair Enterprise of McRae reported that extensive flooding was observed throughout the county. At least five to six miles of county roads were under water and impassible. At least 50 yards of one road was under water and on another water five feet deep and eight feet wide was flowing over the road. (Estimated Damage: \$10,000)

Toombs: The Toombs County 911 Center reported that a couple of dirt roads were washed out. (Estimated Damage: \$5,000)

Upson: The Upson County Emergency Management Director reported that minor street flooding was affecting several roads.

Wilkes: The Wilkes County 911 center and the News Reporter of Washington indicated that a number of roads and streets in the county were flooded, especially in the city of Washington. Several creeks in the county were also out of their banks. Several dirt roads sustained significant damage from flood waters. Rainfall of five to six inches was common throughout the county for the afternoon and evening hours. (Estimated Damage: \$25,000)

## **Gwinnett County** **Norcross**

27	1736EST	0	0	500K	Heavy Rain
	2000EST				

The Atlanta Journal-Constitution reported that nearly 3 inches of rain fell during the evening hours. Sixteen to 20 apartments that were under renovation were flooded and sustained heavy damage when roof damage allowed water to leak into the apartments. Seventy-five to 100 residents had to evacuate as a result.

## **De Kalb County** **Northwest Portion**

27	1900EST	0	0	1M	Flash Flood
28	0100EST				

The DeKalb County Emergency Management Director reported major flooding was once again observed along Peachtree and Nancy Creeks across the northern portion of Atlanta. This information was confirmed by National Weather Service river gages on these creeks. The creek was within two feet of the record stage reached just 10 days earlier during the remnants of Hurricane Ivan. Major flooding affected many roads and homes, many of which were the same ones affected just 10 days prior. The Peachtree Apartments were flooded. Several evacuations and rescues were required. All of this flooding was the result of heavy rain which persisted on the northwest side of the remnants of Hurricane Jeanne as it moved through East Central Georgia.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## GEORGIA, North and Central

### **Fulton County**

#### **North Portion**

27 1900EST 0 0 2M Flash Flood  
28 0100EST

The Fulton County Emergency Management Director reported major flooding was once again observed along Peachtree and Nancy Creeks across the northern portion of Atlanta. This information was confirmed by readings from National Weather Service river gages on the creeks. This was the second time in just 10 days that these creeks rose to record/historical levels. Peachtree Creek rose to 20.6 feet, well above the flood stage of 17 feet and within just two feet of the record stage reached just 10 days earlier during the remnants of Hurricane Ivan. Nancy Creek rose to 12.5 feet, also above its flood stage of 11 feet. Major flooding affected many roads and homes, many of which were the same ones affected just 10 days prior. Biscayne and Wesley Road were flooded along with Woodward Way. The Colonial Homes and Peachtree Apartments were flooded. Several homes in Buckhead were also flooded. A number of evacuations and rescues were required. The Bobby Jones Golf Course was also flooded. Flooding was also observed on Proctor Creek west of Atlanta. All of this flooding was the result of heavy rain which persisted on the northwest side of the remnants of Hurricane Jeanne as it moved through East Central Georgia.

### **Cobb County**

#### **Smyrna**

27 2030EST 0 0 2.5K Heavy Rain

The East Cobb Neighbor reported that very heavy rain caused an awning at a shopping center in Smyrna to collapse. Debris from the damaged awning was spread across the sidewalk.

### **Cobb County**

#### **Marietta**

27 2117EST 0 0 500K Flash Flood  
28 0100EST

The East Cobb Neighbor reported that several homes in Marietta sustained damage from moderate to major flooding from heavy rain associated with the remnants of Hurricane Jeanne.

## GEORGIA, Northeast

### **GAZ010-017**

#### **Rabun - Habersham**

07 1100EST 0 0 60K High Wind (G50)  
2300EST

As the remnants of Hurricane Frances moved north across Georgia, strong winds developed across the mountains, causing fairly widespread damage to trees and power lines.

### **GAZ026-028>029**

#### **Franklin - Hart - Elbert**

07 1530EST 0 0 20K Flood  
2300EST

Persistent heavy rainfall associated with the remnants of Hurricane Frances resulted in flooding along numerous creeks and small streams across the Georgia piedmont. Numerous roads were flooded or washed out.

### **GAZ010-017**

#### **Rabun - Habersham**

07 1530EST 0 0 950K Flood  
08 0700EST

Flooding associated with Frances was more severe across the mountains, where numerous roads and bridges were washed out. In Rabun County, the Joy Bridge Rd bridge was washed out. Buttermilk Ln in the Sky Valley community caved in against a house.

### **GAZ018**

#### **Stephens**

07 1900EST 0 0 Flood  
08 0700EST

Flooding developed across the county during mid-evening, with a few creeks and streams flooding roads. Mudslides were also responsible for taking down a few trees.

### **Franklin County**

#### **Franklin Spgs**

16 1450EST 2 60 0 0 1.1M Tornado (F2)  
1453EST

This tornado moved north across the town of Franklin Springs, damaging or destroying numerous structures along its 3-mile path. The city government building and the fire and police stations incurred significant damage, as did approximately 25 residences. Several large chicken houses were also destroyed.

### **Franklin County**

#### **1.5 NNW Carnesville to Red Hill**

16 1515EST 3.5 30 0 0 25K Tornado (F1)  
1520EST

This tornado touched down near Carnesville, then tracked northwest toward Red Hill, damaging a few homes, as well as numerous trees and power lines along its 5-mile track.

### **Stephens County**

#### **Eastanollee**

16 1530EST 0 0 2K Thunderstorm Wind (G55)

Numerous trees and power lines were blown down.

## Storm Data and Unusual Weather Phenomena

Time Interval	Path Interval	Path Width	Number of Paths	Estimated Paths
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Location	Date	Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	Character of Storm
<b>GEORGIA, Northeast</b>									
<b>Elbert County</b>									
1 SE Fortsonia to 1 WNW Middleton	16	1618EST 1629EST	7.5	30	0	1	100K		Tornado (F1)
This tornado touched down near Fortsonia, causing damage to a house. A resident of the house received minor injuries. Damage was mainly restricted to trees along the the remainder of the path.									
<b>Elbert County</b>									
7 NNE Elberton to 8 NNE Elberton	16	1638EST 1640EST	1	20	0	0	25K		Tornado (F1)
This brief tornado caused damage mainly to trees and power lines.									
<b>Franklin County</b>									
7 W Franklin Spgs to 3 SW Carnesville	16	1645EST 1653EST	5.5	50	1	1	75K		Tornado (F2)
This tornado touched down west of Franklin Springs, then moved north-northwest, damaging several homes, businesses, and vehicles as it tracked toward Carnesville. Numerous trees and power lines were also blown down. A 38-year-old woman was killed when the vehicle she was driving was hit by a falling tree. A passenger in the vehicle received minor injuries.									
F38VE									
<b>GAZ010-017&gt;018</b>									
<b>Rabun - Habersham - Stephens</b>									
	16	1700EST			0	0	325K		High Wind (G55)
	17	0300EST							
High winds developed across the mountains and foothills of northeast Georgia during the evening, as the remnants of Hurricane Ivan moved just west of the area. Widespread tree damage occurred, and many trees fell on structures and vehicles.									
<b>Hart County</b>									
Reed Creek	16	1715EST 1717EST	1.5	40	0	0	5K		Tornado (F1)
This brief tornado blew down numerous trees and power lines near Reed Creek. One tree fell on a house.									
<b>Habersham County</b>									
Clarkesville	16	1730EST 2000EST			0	0			Flash Flood
Flash flooding developed across the county as the outermost rain bands associated with the remnants of Hurricane Ivan produced intense rainfall rates. A few streams overflowed their banks and flooded adjacent roads.									
<b>Habersham County</b>									
Cornelia to 2 NNW Cornelia	16	1930EST 1933EST	2	30	0	0	2K		Tornado (F1)
This tornado blew down numerous trees and power lines along its 2-mile track.									
<b>GAZ010-017&gt;018-029</b>									
<b>Rabun - Habersham - Stephens - Elbert</b>									
	16	2000EST			0	0	5.4M		Flood
	17	0500EST							
<b>GAZ010</b>									
		<b>Rabun</b>							
	17	0000EST			0	0	100K		Landslide
After isolated flash flooding developed earlier in the evening, persistent moderate to heavy rainfall led to a gradual expansion of general flooding across extreme northeast Georgia. By far the hardest hit area was Rabun County, where numerous streams flooded severely, including Toccoa Falls and Worley Creeks, and the Tallulah River. Numerous homes, businesses, and several apartment buildings were damaged by flood water. Another home was destroyed by a mudslide. Many roads and bridges were washed out or otherwise damaged across the area, including highways 15 and 76 in Rabun County, and Yonah Dam Rd in Stephens County, which was washed out to a depth of 30 feet in one section. Water from Toccoa Creek washed away an unoccupied automobile in Toccoa Falls. In Habersham County, families trapped by high water were rescued in Clarkesville and in the northern part of the county.									
<b>GAZ026-028&gt;029</b>									
<b>Franklin - Hart - Elbert</b>									
	16	2000EST			0	0	95K		High Wind (G50)
	17	0300EST							
High winds developed during mid-evening across portions of the piedmont of northeast Georgia, as the remnants of Ivan passed to the west of the area. Numerous trees and power lines were blown down.									
<b>GAZ010-017</b>									
<b>Rabun - Habersham</b>									
	17	2000EST			0	0	60K		High Wind (G50)
	18	0900EST							
As the remnants of Ivan retreated toward the mid-Atlantic region, high pressure building in behind the circulation caused a resurgence of strong winds across the mountains. This resulted in additional tree and power line damage.									





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## GEORGIA, Southeast

### **Bulloch County**

6 E Statesboro to  
5.5 E Statesboro

27 0040EST 0.5 35 0 0 Tornado (F0)

A weak tornado knocked trees and large limbs down.

### **Bulloch County**

3 NW Leefield

27 0115EST 0 0 Thunderstorm Wind (G50)

Thunderstorm winds knocked down trees and large limbs.

### **Screven County**

1 NW Capitolo

27 0150EST 0 0 Thunderstorm Wind (G50)

Thunderstorm winds knocked down trees and large limbs.

### **Bryan County**

1 E Ellabell

27 0435EST 0 0 Thunderstorm Wind (G50)

Thunderstorm winds knocked down trees.

### **Bulloch County**

7 NE Portal to  
7 NNE Portal

27 0500EST 0.5 40 0 0 Tornado (F0)

A weak tornado knocked trees and large limbs down.

### **Screven County**

6 SE Millhaven to  
5.3 SE Millhaven

27 0615EST 0.7 40 0 0 Tornado (F0)

A weak tornado knocked trees and large limbs down.

### **Jenkins County**

4 E Perkins

27 0920EST 0.5 30 0 0 Tornado (F0)

A weak tornado knocked down trees and large limbs.

**GAZ087>088-099>101-114>119-137>141** **Jenkins - Screven - Candler - Bulloch - Effingham - Tattnall - Evans - Inland Bryan - Coastal Bryan - Inland Chatham - Coastal Chatham - Long - Inland Liberty - Coastal Liberty - Inland McIntosh - Coastal McIntosh**

27 0200EST 0 0 Tropical Storm

1300EST

Tropical Storm Jeanne tracked well inland across Georgia but the strongest winds at the time were along the coast.

The maximum wind gust associated with the storm was 44 mph at the Savannah airport. Non-tornadic damage in southeast Georgia was limited to isolated trees and limbs down on power lines.

## GEORGIA, Southwest

### **Lowndes County**

12 NW Valdosta

05 1515EST 0.2 50 0 0 5K Tornado (F0)

A weak tornado briefly touched down and uprooted several trees. One tree was hurled into a garage. Reported by the public.

**GAZ120>122-124>129-142>148-155>160** **Quitman - Clay - Randolph - Terrell - Dougherty - Lee - Worth - Turner - Tift - Early - Miller - Baker - Mitchell - Colquitt - Cook - Berrien - Seminole - Decatur - Grady - Thomas - Brooks - Lowndes**

05 1600EST 0 0 2.2M Tropical Storm

07 0100EST

Tropical Storm Frances continued to slowly weaken as it moved north into southwest Georgia during the late afternoon and evening hours of September 6. Maximum sustained winds reached 38 knots at Albany, GA, with a peak wind gust 59 knots. The lowest sea-level pressure was 991.8 mb at Albany. Rainfall totals ranged from two inches at Newton, GA, to nearly seven inches at Tifton, GA. Many schools and local businesses were closed on September 7. There were numerous reports of washed out roads, downed trees and power lines. Several mobile homes and businesses were damaged. Most of the damage occurred in Grady and Thomas counties, with 140 homes damaged, five mobile homes destroyed, and numerous vehicles damaged. An estimated 30,000 customers were without power. Several counties in southwest Georgia suffered crop yield losses, on the order of 25 to 50 percent. Damage estimates will be realized at the time of the autumn harvest. A state of emergency was declared for much of southwest Georgia.

**GAZ120>123-125-129-142>146-155>161** **Quitman - Clay - Randolph - Calhoun - Dougherty - Tift - Early - Miller - Baker - Mitchell - Colquitt - Seminole - Decatur - Grady - Thomas - Brooks - Lowndes - Lanier**

15 1200EST 0 0 2.0M Tropical Storm

17 0000EST

Hurricane Ivan weakened to a tropical storm as it moved into southwest Alabama on September 16. The maximum sustained wind recorded was 29 knots at Albany, GA. The peak wind gust recorded was 37 knots at Valdosta, GA. The lowest sea-level pressure was 1003 mb at Albany. Rainfall totals varied from 0.75 inches at Tifton and Valdosta, GA to 6.50 inches at Blakely, GA. Minor flooding was reported in Early County. Minor rises were observed on the Kinchafoonee and Muckalee creeks. An estimated 20,000 customers were without power. There were numerous reports of downed trees and power lines. Intense outer rain bands from Ivan spawned several tornadoes in southwest Georgia on September 15. The hardest hit areas were Early and Miller counties,



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## GEORGIA, Southwest

with many homes and businesses damaged. Many schools and businesses were closed on September 16 and 17. A state of emergency was declared for the affected counties. Federal assistance was granted for Early and Miller counties.

### Early County Centerville

15 1540EST 0.5 50 0 0 5K Tornado (F0)

A tornado touched down briefly which downed trees and power lines. Reported by the Early County EMA.

### Early County Blakely to 1 NW Blakely

15 1555EST 1 50 0 0 20K Tornado (F0)  
1557EST

A tornado touched down near the county jail in Blakely and caused minor damage. Scattered trees and power lines were down. Reported by a HAM radio operator.

### Early County 3 S Damascus to 1 S Damascus

15 1616EST 2 50 0 0 15K Tornado (F0)

A tornado touched down near Highway 45 just north of Miller County. It caused minor damage to a few homes, and knocked down trees and power lines. Reported by the Early County EMA.

### Miller County 2 NE Boykin to Colquitt

15 1637EST 4 100 0 0 125K Tornado (F0)  
1642EST

A tornado caused minor damage to nine homes and two businesses in Colquitt. Reported by the Miller County EMA.

### Calhoun County 4 W Arlington

15 1642EST 0.2 50 0 0 5K Tornado (F0)

Brief touchdown of a tornado downed trees and power lines. Reported by the Calhoun EMA.

### Grady County 3 SE Whigham to 2 SW Harrells Still

15 1719EST 15 100 0 0 150K Tornado (F1)  
1741EST

A tornado damaged five homes and several chicken houses in Whigham. Numerous downed trees and power lines blocked several roads along its path. Reported by the Grady County EMA

### Baker County 3 S Hoggard Mill to 3 SSW Hoggard Mill

15 1807EST 1 100 0 0 10K Tornado (F1)

Trees were uprooted and twisted. Power lines were knocked down. Reported by the Baker County EMA.

### Baker County Crestview to 1 W Crestview

15 1827EST 1 100 0 0 20K Tornado (F1)

Trees were uprooted and twisted. Power lines were knocked down. Minor structural damage occurred. Reported by the Baker County EMA.

### Dougherty County 3 E Williamsburg to 3 NE Williamsburg

16 0630EST 2 75 0 0 75K Tornado (F0)  
0633EST

A weak tornado touched down just east of Williamsburg. Several homes near Gravel Hill Road sustained minor damage. Highway 133 near Pecan City was closed due to downed trees. Reported by a SKYWARN storm spotter.

### GAZ125>127-129>131-143>148-156>161 Dougherty - Lee - Worth - Tift - Ben Hill - Irwin - Miller - Baker - Mitchell - Colquitt - Cook - Berrien - Decatur - Grady - Thomas - Brooks - Lowndes - Lanier

26 1800EST 0 0 2.2M Tropical Storm  
27 2100EST

Tropical Storm Jeanne moved north across south central Georgia during the early morning hours of September 27. Maximum sustained winds up to 40 knots with peak gusts to 50 knots were reported. The lowest sea-level pressure was 987.8 mb at Valdosta, GA. Rainfall totals varied from an inch at Albany, GA to nine inches at Tifton, GA. Widespread areal flooding was reported over portions of south central Georgia. In Lowndes County, high water forced 700 residents of a Valdosta subdivision to evacuate. The Withlacoochee River near Valdosta rose above flood stage. Many county and dirt roads were washed out. Schools and local businesses were closed on September 27. There were numerous reports of downed trees and power lines. An estimated 36,000 customers were without power. Many homes were damaged by fallen trees. A state of emergency was declared for the affected counties, with a request for federal assistance.

### GAZ160

#### Lowndes

27 0100EST 0 0 150K Flood  
0300EST

Torrential rainfall from Tropical Storm Jeanne flooded over 100 homes with a foot of water in the Chadwyck Place subdivision in Valdosta. Many county roads were flooded. Reported by the Lowndes County EMA.

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## GULF OF MEXICO

**Bonita Beach To  
Englewood Fl Out  
20Nm**

11 NNW San Carlos Bay	19	1622EST			0	0			Waterspout
13 NW San Carlos Bay		1628EST							

**Bonita Beach To  
Englewood Fl Out  
20Nm**

13.5 NW San Carlos Bay	19	1633EST			0	0			Waterspout
15 WNW San Carlos Bay		1635EST							

A waterspout over Pine Island Sound moved west across Pine Island then into the Gulf of Mexico

**Lake Ponchartrain  
And Lake Maurepas**

Mid Lke Pontchartrain	23	1045CST			0	0			Marine Tstm Wind
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## HAWAII

**Honolulu County  
Haleiwa**

	03	1600HST 1630HST			0	0			Funnel Cloud
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A funnel cloud was sighted by a resident of Haleiwa on the North Shore of Oahu. The phenomenon was associated with showery low clouds that had developed in the afternoon hours of the 3rd. The funnel never touched down and produced no damages or injuries.

**HIZ026**

**Kohala**

06	1330HST			0	0			Wildfire
07	0200HST							

A fire burned about 125 acres of brush in the South Kohala District on the Big Island of Hawaii, 9 miles south/southwest of Kamuela and 4 1/2 miles east/southeast of Waikoloa. The fire was caused by a van, involved in a two-van collision on Waikoloa Road, when it tumbled off the road into a nearby dry, grassy area. Part of Waikoloa Road had to be closed for more than six hours while firefighters fought the blaze. However, no homes were threatened or had to be evacuated. There were no serious injuries or property damage.

**HIZ026**

**Kohala**

12	1105HST			0	0			Wildfire
15	0900HST							

A fire consumed nearly 2000 acres of brush in the South Kohala District on the Big Island of Hawaii, 8 miles west of Kamuela. A total of 70 families had to be evacuated from the Mauna Kea Uplands subdivisions near Mauna Kea Beach Resort and from the Waiula Ole Self-Help Housing Community on Sunday afternoon, the 12th. All the families, however, were allowed to return to their homes by Sunday evening or Monday morning. The blaze was in an area of unexploded ordnance left over from World War II-era training exercises. Some of the munitions did explode during the time of the fire, but no one was seriously hurt.

The fire forced the closure of Kawaihae Road and Queen Kaahumanu Highway for a time near the blaze on the 12th.

Hawaii County used many firefighters and a lot of equipment, including bulldozers and helicopters, to battle the fire. This put a severe financial burden on the county, though even unofficial cost estimates were not readily available. The fire fighting was successful, on the other hand, in that there were no serious injuries or property damage. The cause of the blaze was under investigation.

**HIZ001>003-005>006-  
012>014-016-018>021-  
023>025**

**Niihau - Kauai Windward - Kauai Leeward - Oahu South Shore - Waianae Coast - Molokai Windward -  
Molokai Leeward - Lanai Makai - Kahoolawe - Maui Leeward West - Maui Central Valley - Windward  
Haleakala - Leeward Haleakala - Kona - South Big Island - Big Island North And East**

14	0700HST			0	0			Heavy Surf/High Surf
15	1400HST							

A storm low in the southern hemisphere generated surf of 6 to 8 feet along the south shores of all the Hawaiian Islands. No serious injuries or property damage were reported.

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## HAWAII

**HIZ001>003-005>006-012>014-016-018>021-023>025** Niihau - Kauai Windward - Kauai Leeward - Oahu South Shore - Waianae Coast - Molokai Windward - Molokai Leeward - Lanai Makai - Kahoolawe - Maui Leeward West - Maui Central Valley - Windward Haleakala - Leeward Haleakala - Kona - South Big Island - Big Island North And East

25	0830HST	0	0	Heavy Surf/High Surf
28	1600HST			

A strong low in the southern hemisphere produced surf of 5 to 10 feet along the south shores of all the Hawaiian Islands. There were no reports of serious property damage or injuries, however.

## HAWAII WATERS

**Big Island Leeward Waters**

23 NW Kailua-Kona	03	1130HST 1150HST	0	0	Waterspout
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An airplane pilot spotted two waterspouts more than 20 miles northwest of Kailua-Kona on the Big Island of Hawaii. However, they caused no serious injuries or property damage to air traffic or water craft.

## IDAHO, Extreme Southeast

NOT RECEIVED.

## IDAHO, North

NONE REPORTED.

## IDAHO, Northwest

NONE REPORTED.

## IDAHO, Southeast

**Custer County**  
8 N Stanley

01	1700MST 1720MST	0	0	8K	Thunderstorm Wind (G70)
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At the Mormon Bend Campground strong winds downed 13 large trees, cut through 5th wheel trailer and ripped tents. Estimated damage at 8,000 dollars.

## IDAHO, Southwest

NONE REPORTED.

## ILLINOIS, Central

**Lawrence County**  
Bridgeport

02	2045CST 2200CST	0	0	Flash Flood
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1 to 2 inches of rain fell in a short period of time over Lawrence County from Sumner to just west of Lawrenceville. The heavy rain caused Route 250 between Bridgeport and Lawrenceville to become flooded.

**Champaign County**  
Champaign

14	1500CST 1800CST	0	0	Flash Flood
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2 to 3 inches of rain fell in the Champaign area in a short period of time. The heavy rainfall caused an underpass in Champaign to become impassible, with 3 to 4 feet of water on the roadway.

## ILLINOIS, Northeast

NONE REPORTED.

## ILLINOIS, Northwest

**ILZ034>035**

<b>Hancock - Mcdonough</b>					
16	0430CST 1926CST	0	0	10K	Flood

A major rain event on the 15th of September resulted in minor agricultural flooding on parts of the Cedar and La Moine Rivers.

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## ILLINOIS, South

**ILZ083**

**White**

**01 0000CST**

**0**

**0**

**Flood**

**02 1700CST**

The Little Wabash River remained above flood stage after two rounds of intense thunderstorms on the 26th and 28th of August. The river crested at Carmi late in August, and fell below flood stage on the second of September. The flooding was minor, consisting mostly of inundated lowlands and county roads.

**ILZ087**

**Gallatin**

**23 0200CST**

**0**

**0**

**Flood**

**26 1700CST**

Despite very dry weather in September, the Ohio River rose rapidly due to copious rainfall in the upper Ohio Valley from the remnants of Hurricanes Frances and Ivan. The only gage location along the Illinois side to exceed flood stage was Shawneetown, not far from the Indiana border. The crest flattened out as it moved further downriver. The crest at Shawneetown was 35.7 feet on the afternoon of the 25th. Flood stage there is 33 feet. Minor flooding of low-lying bottomlands occurred.

## ILLINOIS, Southwest

NONE REPORTED.

## INDIANA, Central

NONE REPORTED.

## INDIANA, Northeast

**White County**

**Monon**

**03 0900EST**

**0**

**0**

**0**

**Flash Flood**

**1100EST**

Emergency management reported flash flooding in Monon with flooding at a trailer park and cars floating at a car dealership.

**White County**

**Monon**

**03 1025EST**

**0**

**0**

**0**

**Flash Flood**

**1100EST**

Monon Fire Dept reported flooding at the station and in downtown Monon.

**White County**

**Monon**

**03 1030EST**

**0**

**0**

**50K**

**Flash Flood**

**1100EST**

Emergency management reported flooding in downtown Monon with flash flooding reported. A car dealership and a trailer park had flood damage...with flooding at the Monon Fire Dept.

**Allen County**

**Ft Wayne**

**03 2200EST**

**0**

**0**

**0**

**Flash Flood**

**04 0030EST**

Underpass in downtown Ft. Wayne reported flooded. Few roads closed within city limits due to flash flooding.

**Allen County**

**Ft Wayne**

**03 2329EST**

**0**

**0**

**0**

**Flash Flood**

**04 0030EST**

Spy Run Creek crested at 8.88 feet...0.8 feet above flood stage. Reports of flash flooding along Hanauer Rd.

## INDIANA, Northwest

NONE REPORTED.

## INDIANA, South Central

**INZ089**

**Perry**

**23 1900EST**

**0**

**0**

**Flood**

**24 1300EST**

The Ohio River at Tell City, IN crested at 38.2 feet around 7 AM EST on September 24. Flood stage at Tell City is 38 feet. Minor flooding occurs at this level. Indiana Highway 66 is flooded between Rome and Derby.

## INDIANA, Southeast

NONE REPORTED.

## INDIANA, Southwest

**INZ081>082-085>088**

**Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer**

**22 0000CST**

**0**

**0**

**Drought**

**30 2359CST**

This was the driest September on record for southwest Indiana. At Evansville, the monthly rainfall was only 0.09 inch, which broke the old September record of 0.25 inch set in 1928. This was the third driest month on record at Evansville, where records extend back to 1897. The dry weather turned lawns and fields brown. The dry weather set in too late to harm crops. In fact, the timing of

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## INDIANA, Southwest

**INZ085-087>088**

the dry weather helped farmers harvest a bountiful crop.

**Posey - Warrick - Spencer**

22	0300CST				0	0		400K	Flood
27	1700CST								

Despite very dry weather in September, the Ohio River rose above flood stage due to copious rainfall in the upper Ohio Valley from the remnants of Hurricanes Frances and Ivan. At Newburgh Lock and Dam, the river crested at 41.36 feet on the evening of the 24th. This is about 3 feet above the 38-foot flood stage. At Mount Vernon, the river crested at 35.9 feet on the afternoon of the 25th. Flood stage at Mount Vernon is 35 feet. The flooding was minor, affecting agricultural bottomlands.

## IOWA, Central

**Greene County**

8 S Jefferson to  
4 SE Jefferson

05	1704CST	2	40	0	0	50K	10K	Tornado (F1)
	1710CST							

Small tornado caused garage, porch, and tree damage from about 310th Street and O Avenue to 290th Street and P avenue showing the most damage. Damage in Rural areas was to trees and power poles.

**Greene County**

2 W Jefferson

05	1715CST	0.5	25	0	0		1K	Tornado (F0)
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Brief touchdown in open country.

**Hamilton County**

4 NW Webster City

05	1815CST	0.2	20	0	0		1K	Tornado (F0)
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Brief touchdown in open country.

**Warren County**

5 SW Norwalk

05	1852CST	0.2	20	0	0		1K	Tornado (F0)
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Brief touchdown in open country.

**Lucas County**

5 NW Lucas to  
9.5 NNW Lucas

05	1948CST	2	50	0	0	75K	5K	Tornado (F0)
	1951CST							

Tornado touched down in northwest Lucas County and tracked northeast for about two miles. Extensive damage was reported on one farm.

**Polk County**

8 E Elkhart

05	1951CST	0.5	25	0	0	5K	1K	Tornado (F0)
	1952CST							

Tornado made a brief touchtown in open country.

**Warren County**

2 W Lacona

05	2000CST			0	0	5K	2K	Thunderstorm Wind (G52)
	2002CST							

**Story County**

1 SE Collins to  
3 NE Collins

05	2006CST	2.7	40	0	0	30K	2K	Tornado (F1)
	2011CST							

Tornado damaged 4 outbuildings and downed trees. Tornado tracked northeast and terminated 3 miles northeast of Collins.

**Story County**

1 N Colo

05	2014CST			0	0	2K		Thunderstorm Wind (G52)
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**Marshall County**

3 SW State Center to  
State Center

05	2017CST	3	25	0	0	20K	5K	Tornado (F0)
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Tornado tracked across open country but did damage trees, sheds, and a grain bin.

**Marshall County**

3 SW State Center to  
3 WNW State Center

05	2017CST	3.5	30	0	0	10K	2K	Tornado (F1)
	2024CST							

Tornado tracked through rural areas of Marshall County west of State Center.

A cold front advanced across the plains and moved into Iowa during the night of the 6th. The weather situation was quite dynamic for early September. A low level jet of 50 kts developed ahead of the cold front. Warm air moved in at 500 mb during the day, which reduced the lapse rate significantly. There was a lot of CAPE, shear, and helicity in the lowest one to two kilometers of the surface, but parameters were weak above that. This lead to a mini supercell event. CAPE values were around 1500 J/kg and lifted indices in the -4 to -5 C. range. The freezing level was quite high and was in the 15,000 to 15,500 foot range. A line of thunderstorms that had persisted through the day ahead of the cold front strengthened during the mid and late afternoon hours before pushing east across Iowa. There was very little in the way of wind with this event with only an isolated event reported in Story County, and no hail reported. High winds caused tree damage in the Lacona area of Warren County. The winds were along the track of a tornado that touched down in Lucas County, however there was no evidence that the tornado was on the ground in Warren County. Several small tornadoes occurred over northwest into central Iowa. Most of them were brief touchdowns in open

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## IOWA, Central

area, resulting in little damage. One of the tornadoes was on the ground for about 2 miles in Greene County. The tornado damages garages, porches, and trees for the most part. Several power lines were taken down as well. A second tornado in Greene County caused minor house damage west of Jefferson. Another stronger tornado touched down southeast of Collins in Story County. Four out buildings were damages or destroyed and numerous trees were taken down. This tornado was on the ground for nearly 3 miles as it headed northeast of Collins. The tornado lifted and another tornado formed in Marshall County shortly after the cell crossed the border. A tornado touched down in northwest Lucas County and tracked for 2 miles northeast. One farmstead had extensive damage with one machine shed destroyed and others damaged. Three other tornadoes occurred, One in Polk County east of Elkhart did minor damage. Another tornado touched down northwest of State Center and caused F1 damage along its 3 mike long track.

<b>Crawford County</b> 1 E Charter Oak	14	1655CST			0	0		2K	Hail (0.75)
<b>Crawford County</b> 3 N Schleswig	14	1711CST			0	0	1K	5K	Hail (1.00)
<b>Crawford County</b> Deloit	14	1746CST			0	0		2K	Hail (0.88)
<b>Crawford County</b> 2 S Kiron	14	1752CST			0	0		2K	Hail (0.88)
<b>Crawford County</b> 5 N Dow City	14	1822CST			0	0		1K	Hail (0.75)
<b>Kossuth County</b> Burt	14	1830CST 2245CST			0	0	25K	10K	Flash Flood
<b>Crawford County</b> Deloit	14	1845CST			0	0	5K		Thunderstorm Wind (G50)
<b>Winnebago County</b> Lake Mills	14	1912CST			0	0	5K		Thunderstorm Wind (G50)
<b>Emmet County</b> Countywide	15	0000CST 0600CST			0	0	200K	50K	Flash Flood
<b>Winnebago County</b> Countywide	15	0000CST 0230CST			0	0	50K	10K	Flash Flood
<b>Worth County</b> Countywide	15	0030CST 0430CST			0	0	100K	25K	Flash Flood
<b>Palo Alto County</b> 6 WNW Emmetsburg	15	0130CST 0430CST			0	0	25K	5K	Flash Flood
<b>Palo Alto County</b> Countywide	15	0500CST 0800CST			0	0	50K	10K	Flash Flood

A strong southerly flow developed over Iowa as a cold frontal boundary slid southeast into the state. Low level winds of 30 to 45 kts impinged on the front during the late afternoon and into the night. Dew points rose into the low 70s, with surface temperatures in the mid to upper 80s. CAPE values were around 1500 J/kg with lifted indices in the -4 to -5 C. range. Plenty of moisture was drawn into the state with precipitable water values in the 1.5 to 2 inch range. Thunderstorms formed during the late afternoon and evening hours and produced three quarter to one inch diameter hail in west central into parts of northwest Iowa. A few storms produced high winds that blew down trees and broke power lines as well. Heavy rainfall fell over northern Iowa. The rain fell in areas that had about 1.5 inches of rain the previous night. As the additional 3 to 4 inches of rain fell in Kossuth County, flash flooding was reported in the northern part of the county near the intersection of U.S. Highway 169 and Iowa Highway 9. Three to five inches of rain fell in southern Winnebago County. Flash flooding occurred north of Forest City with U.S. Highway 69 flooded and closed at 380th Street two and one half miles north of Forest City. Damage was also reported in the Thompson area and toward Lake Mills. Six to twelve inches of flowing water washed out gravel roads in the area. The same situation occurred in Worth County, where 8 inches of rain washed out roads in the Joice area. The heaviest rainfall occurred in the northwest part of the state with officials reporting 4 to 9 inches of rainfall overnight in Kossuth County, and 6 to 12 inches in Emmet County. In Emmet

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## IOWA, Central

County, 5 to 6 feet of water was reported in several homes and there were numerous washouts of gravel roads. Highway 4 in Emmet County was closed with water running over the highway one quarter of a mile wide. Some of the areas were hit by two rounds of heavy precipitation. One flash flooding event occurred around midnight, the second from heavy rainfall shortly before dawn.

**IAZ004>007-015>017-023>024-027>028-039** **Emmet - Kossuth - Winnebago - Worth - Palo Alto - Hancock - Cerro Gordo - Pocahontas - Humboldt - Butler - Bremer - Black Hawk**

15	0500CST	0	0	600K	1.2M	Flood
22	0630CST					

Very heavy rain struck northwest and extreme northern Iowa at mid-month. An area of thunderstorms, bringing mostly 1 to 2 inch rain amounts, fell across northwest Iowa on the night of the 13th and morning of the 14th. This was soon followed by a procession of thunderstorms from mid-day on the 14th to sunrise on the 15th when additional 6 or more inches of rain fell on a wide area from O'Brien and Cherokee Counties northeast into southeast Minnesota. At Spencer (7.13, Estherville (6.45) and Swea City (6.82) the rainfall for the 24 hour period ending at 0600 CST on 15 September was the heaviest ever recorded for a 24-hour period. Official 24-hour totals peaked at 8.71 inches at the Estherville Airport with unofficial amounts reported of as much as a foot of rain. Still more rain fell in the area on the 17th and 21st. Official monthly rainfall totals included 15.62 inches at Spencer Airport with 14.43 inches of it falling from the night of the 13th to the morning of the 22nd. This easily broke the previous Spencer record for precipitation for any month of 12.13 inches in August of 1975. These were the heaviest rains reported in Iowa since June of 1998. The heavy rainfall caused several rivers to overflow their banks. This caused some damage due to flooded property and drown crops along the river bank. Flooding was reported in the East Fork Des Moines, Des Moines, Winnebago, Shell Rock, and Cedar River systems.

### **Pocahontas County**

2 N Havelock	17	1400CST	0	0	2K	5K	Hail (0.88)
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### **Webster County**

Barnum	17	1553CST	0	0	5K		Thunderstorm Wind (G50)
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### **Calhoun County**

1 N Lohrville	17	1600CST	0	0	3K	5K	Hail (1.00)
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### **Calhoun County**

2 S Farnhamville	17	1614CST	0	0	3K	5K	Hail (1.00)
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### **Webster County**

6 S Callender	17	1633CST	0	0			Hail (0.75)
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A warm front extended across South Dakota, through eastern Nebraska, into eastern Kansas. The stability parameters were not all that impressive with CAPE values of 1000 J/kg or less and lifted indices quite marginal. A strong south-southwest flow in the low levels developed with a 30 to 40 kt flow crossing the frontal boundary. Thunderstorms originally developed in South Dakota the night before and that small area of convection translated east-southeast into Iowa. The main severe weather feature was hail of three quarter to one inch in diameter with the storms. There was a wind gust of 58 MPH measured in Webster County at Barnum.

### **Taylor County**

4 NNW Conway	18	0130CST	0	0	2K	5K	Hail (0.88)
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### **Adams County**

5 S Corning	18	0200CST	0	0	3K	5K	Hail (1.00)
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### **Adams County**

5 N Prescott	18	0325CST	0	0	3K	5K	Hail (1.00)
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The situation remained unchanged during the overnight hours of the 17th into the 18th. Low pressure remained over eastern Montana, with an elevated warm front extending southeast through eastern Nebraska into far eastern Kansas. Stability parameters remained weak, however a 40 kt low level jet continued to blow across the front. The strong warm air advection resulted in an area of elevated convection that developed around midnight and continued through much of the predawn hours. Severe weather was limited with these storms, but a few of the storms produced hail up to an inch in diameter.

## IOWA, East Central and Southeast

**IAZ067-078** **Muscatine - Louisa**

23	2100CST	0	0	10K	Flood
24	1915CST				

A major rain event on the 15th of September resulted in minor agricultural flooding on parts of the Cedar and La Moine Rivers.





# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## IOWA, Northwest

### Clay County Countywide

15 0430CST 0 0 Flash Flood  
0800CST

Rainfall of 3 to 5 inches brought the total since the previous evening began to over 10 inches in the Spencer and Royal areas. The rain caused widespread and severe flooding of roads, including highway 18 just west of Dickens. Basements, small streams, farmland, and other low areas were also flooded.

### Buena Vista County 4 S Linn Grove

15 0445CST 0 0 10K Thunderstorm Wind (G69)

Thunderstorm winds uprooted trees, blew off the top of a 100 foot silo, and blew down a chicken pen.

### Buena Vista County Alta

15 0450CST 0 0 10K Thunderstorm Wind (G61)

Thunderstorm winds caused tree damage at a cemetery, and moved a 20 inch tombstone 36 feet.

### Buena Vista County Storm Lake

15 0450CST 0 0 20K Thunderstorm Wind (G61)

Thunderstorm winds caused tree and power line damage. The damage resulted in a power outage that lasted two and a half hours and affected over a thousand city households, about a third of the city's population.

## IAZ013>014-021>022

### O'Brien - Clay - Cherokee - Buena Vista

15 0600CST 0 0 Flood  
30 2359CST

Repeated heavy rain caused flooding of the Little Sioux River, and also of the Ocheyedan River in the Spencer area. The flooding affected mainly farmland and other fields with resulting crop damage. The amount of crop damage was not known. The crest of the Little Sioux River at Linn Grove on September 19th was the second highest stage there on record, and the crest of the Little Sioux River at Spencer on September 18th was 4.3 feet above flood stage.

### Sioux County 5 E Ireton

17 0758CST 0 0 Hail (0.75)

### Sioux County 1 S Orange City

17 0817CST 0 0 Hail (0.75)

### Clay County Spencer

17 1230CST 0 0 Flash Flood  
1715CST

Four inches of rain falling on saturated ground caused widespread flooding of streets and basements. Several roads were closed, mostly at intersections, because of high water which was flowing rapidly. Other low areas including a park and campground were flooded. The main damage was from the basement flooding, but the amount of damage was not known.

### Clay County 2 SW Cornell

17 1309CST 0 0 Hail (0.88)

### Clay County 4 E Webb

17 1311CST 0 0 Hail (0.75)

## IOWA, Southwest

### Monona County Moorhead

14 1555CST 0 0 Hail (0.88)

### Harrison County 3 NW Little Sioux

14 1708CST 0 0 Hail (1.25)

## KANSAS, East

### Cloud County Concordia

15 0158CST 0 0 Thunderstorm Wind (G56)

### Clay County Clay Center

15 0245CST 0 0 9K Thunderstorm Wind (G55)

Strong winds blew down power lines. Also a tree was blow down onto a parked car doing minor damage. Asecond tree was blown down onto the roof of a house causing some roof damage.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## KANSAS, East

### Marshall County

Blue Rapids 15 0315CST 0 0 2K Thunderstorm Wind (G60)

Strong winds blew down a 15 inch diameter tree limb which did minor damage to a pick-up truck parked nearby.

### Cloud County

Clyde 17 0900CST 0 0 Hail (1.00)

### Dickinson County

3 W Hope 17 1121CST 0 0 Hail (1.25)

### Dickinson County

3 W Hope 17 1124CST 0 0 Hail (1.75)

### Lyon County

Neosho Rapids 17 1155CST 0 0 Hail (0.75)

## KANSAS, Extreme Southeast

NONE REPORTED.

## KANSAS, North Central

### Phillips County

Speed 17 0625CST 0 0 0 0 Hail (0.75)

### Smith County

3 SSW Gaylord 17 0800CST 0 0 0 0 Hail (0.75)

### Phillips County

Logan 30 2000CST 0 0 0 0 Hail (0.75)

### Phillips County

Logan 30 2123CST 0 0 0 0 Hail (0.88)

## KANSAS, Northeast

### Leavenworth County

3 N Leavenworth 17 2140CST 0 0 Hail (0.88)

## KANSAS, Northwest

### Sherman County

Goodland Arpt 04 1458MST 0 0 Thunderstorm Wind (G55)

Localized microburst at airport. Winds under 35 mph at weather office 1/2 mile from ASOS equipment.

### Sherman County

Goodland Arpt 04 1458MST 0 0 Thunderstorm Wind (G55)

### Decatur County

9 N Norcatur 13 1609MST 0 0 Hail (0.75)

### Decatur County

Oberlin 13 1735MST 0 0 Hail (0.88)

### Decatur County

Oberlin 13 1739MST 0 0 Hail (0.88)

### Cheyenne County

19 NW St Francis 14 1735MST 0 0 Hail (2.00)

### Cheyenne County

14 NW St Francis 14 1735MST 0 0 Hail (1.00)

### Cheyenne County

4 NW St Francis 14 1735MST 0 0 Thunderstorm Wind (G61)

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
<b><u>KANSAS, Northwest</u></b>									
<b>Cheyenne County</b>									
13 NW St Francis	14	1747MST			0	0			Thunderstorm Wind (G65)
<b>Cheyenne County</b>									
12 N Wheeler	14	1800MST			0	0			Thunderstorm Wind (G52)
Six-inch tree limbs broken off.									
<b>Rawlins County</b>									
11 N Atwood	14	1848MST			0	0			Hail (1.75)
<b>Rawlins County</b>									
7 N Atwood	14	1852MST			0	0			Hail (1.00)
<b>Rawlins County</b>									
2 S Atwood	14	2041MST			0	0			Hail (1.00)
<b>Rawlins County</b>									
Atwood	14	2045MST			0	0			Hail (1.00)
<b>KSZ027</b>									
<b>Wallace</b>									
14		2055MST			0	0			High Wind (G60)
		2100MST							
Non-convective wind gust measured at Weskan school.									
<b>KSZ001-013-015</b>									
<b>Cheyenne - Sherman - Sheridan</b>									
19		1200MST			0	0			High Wind (G52)
		1700MST							
<b>Wallace County</b>									
2 SW Weskan	24	1525MST			0	0			Hail (0.88)
<b>Sherman County</b>									
14 S Kanorado	24	1541MST			0	0			Hail (0.75)
<b>Sherman County</b>									
14 S Kanorado	24	1541MST			0	0			Thunderstorm Wind (G52)
Four-inch tree limb down.									
<b>Sherman County</b>									
12 S Kanorado	24	1545MST			0	0			Hail (0.75)
<b>Sherman County</b>									
15 S Goodland	30	1505MST			0	0			Hail (0.88)
<b>Sherman County</b>									
15 S Goodland	30	1510MST			0	0			Hail (1.75)
<b>Thomas County</b>									
12 N Brewster	30	1547MST			0	0			Hail (0.88)
<b>Thomas County</b>									
12 N Brewster	30	1547MST			0	0			Thunderstorm Wind (G52)
<b>Thomas County</b>									
Brewster	30	1547MST			0	0			Thunderstorm Wind (G65)
Tree down and power pole broken.									
<b>Thomas County</b>									
Colby	30	1551MST			0	0			Hail (0.75)
<b>Thomas County</b>									
Colby	30	1551MST			0	0			Thunderstorm Wind (G50)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## KANSAS, Northwest

### Rawlins County

Atwood 30 1602MST 0 0 Thunderstorm Wind (G51)

Measured by KSN Weatherlab Site.

### Graham County

3 S Morland 30 1755MST 0 0 Hail (0.75)

### Graham County

11 E St Peter 30 1820MST 0 0 Hail (0.88)

### Graham County

13 SSE Hill City 30 1834MST 0 0 Hail (1.00)

### Graham County

8 NNE Hill City 30 1956MST 0 0 Hail (0.88)

## KANSAS, Southeast

NONE REPORTED.

## KANSAS, Southwest

### Comanche County

4 N Coldwater 17 1555CST 0 0 Hail (1.50)

### Stafford County

18 NNE St John 17 1625CST 0 0 Hail (1.25)

### Kiowa County

5 SE Greensburg 17 1637CST 0 0 Hail (0.88)

### Kiowa County

6 ESE Greensburg 17 1646CST 0 0 Hail (1.75)

### Kiowa County

9 E Greensburg 17 1650CST 0 0 Hail (1.00)

### Kiowa County

Wellsford 17 1720CST 0 0 Hail (0.75)

### Pratt County

15 W Pratt 17 1725CST 0 0 Hail (0.88)

### Hamilton County

20 S Coolidge 24 1343CST 0 0 Hail (0.88)

### Hamilton County

13 N Coolidge 24 1600CST 0 0 Hail (0.75)

### Scott County

11 NE Scott City 30 1810CST 0 0 Hail (0.75)

### Trego County

8 NNW Wakeeney 30 1915CST 0 0 Hail (0.88)

## KENTUCKY, Central

### KYZ042

#### Bourbon

17 1500EST 0 0 Flood

18 1900EST

The Stoner Creek at Paris, KY crested at 20.2 feet around 6 AM EST on September 18. Flood stage at Paris is 18 feet. Minor flooding occurs at this level. Water enters the yards of homes downstream from the water plant. Parts of the city park are flooded.

### KYZ043

#### Nicholas

18 0600EST 0 0 Flood

20 0800EST

The Licking River at Blue Licks Spring crested at 26.8 feet around 7 PM EST on September 19. Flood stage at Blue Licks Spring is 25 feet. Minor flooding of bottomland occurs at this level.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>KENTUCKY, Eastern</u></b>									
<b>KYZ087</b>	<b>Bell</b>								
	08	0630EST 1330EST			0	0	0	0	Flood
<b>KYZ106-106</b>	Fourteenth and 19th Streets in Middlesboro closed due to high water. Happy Hollow Road closed due to high water. Mud lick road, just outside of Middlesboro, also covered by water. Ten inches of water on old Pineville Pike south of Meldrum.								
	<b>Morgan</b>								
	08	0943EST			0	0	0	0	Flood
	09	0900EST							
<b>KYZ106</b>	Highway 711 near Wrigley closed due to high water. Water covering Laurel Fork Road at Highway 172, about 2 miles southwest of Crockett. Three feet of water covering Gordon Ford Road off of Highway 460 near Wrigley due to backwater flooding.								
	<b>Morgan</b>								
	08	1215EST 1915EST			0	0	0	0	Landslide
<b>KYZ108</b>	Highway 7, two miles north of West Liberty, closed due to a rock and mud slide. Highway closed for several hours.								
	<b>Wolfe</b>								
	08	1310EST 1800EST			0	0	0	0	Flood
<b>KYZ059-059</b>	Highway 191 near Wilson Branch Road impassable due to high water. Highway 3356, or Stamper Branch Road, and Highway 1010 East near Tolliver impassable due to high water.								
	<b>Powell</b>								
	08	1318EST			0	0	0	0	Flood
	10	1530EST							
<b>KYZ050</b>	Flood waters form Hardwick Creek over Highway 1057. Highway 15 at Bowen and Cane Creek Road at Rosslyn closed due to high water along the Red River. Area schools closed due to flooded roads. Pompeii Road near Highway 11 and Highway 615 in Clay City closed due to high water. Beach Fork Road closed due to high water. Highway 2026 between mile markers 0 and 1 in Clay City closed due to high water.								
	<b>Montgomery</b>								
	08	1323EST 1800EST			0	0	0	0	Flood
<b>KYZ111</b>	Water covering Highways 1050 and 460 near the Meniffee county line.								
	<b>Lee</b>								
	08	1330EST 1700EST			0	0	0	0	Flood
<b>KYZ058</b>	Highway 52 W, near Crystal, was closed for a few hours due to high water.								
	<b>Estill</b>								
	08	1730EST			0	0	0	0	Flood
	09	0400EST							
<b>KYZ079</b>	Murphys Ford Road on the Red Lick Side was closed due to flooding. This is located off of Route 52, west of Irvine. Dark Hollow Road was also closed due to flooding.								
	<b>Pulaski</b>								
	17	0100EST			0	0	1K	0	Strong Wind
<b>KYZ080</b>	Numerous trees and large limbs down countywide.								
	<b>Laurel</b>								
	17	0450EST			0	0	0	0	Flood
	18	1600EST							
<b>Laurel County Victory</b>									
	17	0530EST 0900EST			0	0	0	0	Flash Flood
<b>KYZ086-086-086-086-086</b>	Water reported running through a home off Highway 490 in Victory.								
	<b>Knox</b>								
	17	0619EST			1	0	103K	0	Flood
	20	1400EST							

On September 18, 2004 at approximately 10:47 pm EST, a 20 year old man drowned while attempting to drive his vehicle through flood waters on Highway 459, near the junction of Bull Run road, 5 miles southwest of Barbourville. The road was closed at the time of the incident. Four feet of water over a bridge near Central Elementary School in Corbin. Highway 66, nine miles north of

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **KENTUCKY, Eastern**

Pineville, had water flowing over it. Highway 229 blocked by high water. Stinking Creek and Little Brush Creek Roads also flooded. Highway 225, one mile from Warren Camp underwater. Three homes flooded on Big Bush Creek Road. Highway 1527 also underwater.

M20VE

**KYZ112**

**Breathitt**

17 0730EST  
1900EST

0 0 0 0 Flood

Law enforcement officials reported that Cane Creek Branch Road Smiths Branch roads were flooded. Water depth was unknown at time of reports. Law enforcement also reported that four to five feet of water covered Highway 1098 at Smith Branch Road.

**KYZ112**

**Breathitt**

17 0730EST  
1900EST

0 0 0 0 Flood

An off duty National Weather Service Employee reported that the Belcher Fork had come out of its banks and was surrounding several trailers 3 miles southwest of Jackson.

**KYZ059**

**Powell**

17 0745EST  
19 2045EST

0 0 0 0 Flood

The public reported that water was flowing across Highway 1057 near Clay City. Water was also reported over the road on Highway 2001 at the intersection of Highway 1057.

**KYZ051-051**

**Bath**

17 0820EST  
19 2045EST

0 0 132K 0 Flood

Cannel City, Sour Springs, and McCarty roads closed due to high water. Highway 211 South in Salt Lick closed due to high water. Water also reported over Pistol Road and Pinegrove Road near Olympia.

**KYZ069**

**Jackson**

17 0830EST  
1700EST

0 0 0 0 Flood

County officials reported that Sand Lick Road off of Highway 421, North of McKee, and Gray Hawk Park Road near Gray Hawk, were impassable due to high water. Welchburg Road, in Welchburg, and Highway 421 near Clover Bottom were also impassable due to high water.

**KYZ108**

**Wolfe**

17 0840EST  
2130EST

0 0 0 0 Flood

Route 191 at Helechawa was flooded. Maddix Branch Road closed due to 2 to 6 inches of water flowing across the roadway. Banks Fork Road also closed due to one and one half feet of water flowing across roadway. Both roads are off of Highway 1094.

**KYZ117**

**Leslie**

17 0851EST  
19 1445EST

0 0 0 0 Flood

Highway 699 near Cutshin underwater.

**KYZ060**

**Menifee**

17 0900EST  
19 1445EST

0 0 0 0 Flood

News media received reports of several road closures. Evacuations were necessary on Tolan Road due to flood water. Some bridges also impassable due to flood water. Flooding also reported along Highway 460 in Frenchburg.

**KYZ116-116**

**Clay**

17 0900EST  
1900EST

0 0 0 0 Flood

Highway 80 and small side roads flooded. Eighteen inches of water reported flowing over Highway 472 at Muncy Fork, or halfway between Burning Springs and Fogertown.

**KYZ058-058**

**Estill**

17 0900EST  
20 2130EST

0 0 0 0 Flood

Numerous roads closed due to high water including, Dark Hollow Road off Highway 52 near Irvine, Driftwood Drive off Millers Creek, and Murphys Ford off Highway 895 between Red Lick and Wagersville Roads. Law enforcement officials reported fourteen roads closed due to high water in and around Irvine.

**KYZ058**

**Estill**

17 0900EST  
0930EST

0 0 1K 0 Strong Wind

Cedar Creek Road, Dark Hollow Road, and Murphys Fork Road all closed due to downed trees. Three trees down, one stuck by lightning, 1 tree blocking road. Power out in Irvine.

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>KENTUCKY, Eastern</u></b>									
<b>KYZ052</b>	<b>Rowan</b>								
	17	0900EST			0	0	75K	0	Flood
		1900EST							
<b>KYZ106-106-106</b>	Water reported over Highway 60 West at Cincinnati Branch.								
	<b>Morgan</b>								
	17	0905EST			0	0	99K	0	Flood
		2130EST							
<b>KYZ084</b>	Route 7 near West Liberty closed due to a mudslide. Detour around mudslide on Route 1161 closed due to high water. Highway 460 near Grassy Creek flooded. Highway 711 north of Wrigley flooded.								
	<b>Mccreary</b>								
	17	0915EST			0	0	0	0	Flood
		1900EST							
<b>KYZ085</b>	Hayes Creek Road, off Highway 92 East or 6 miles from Whitley County line, had 6 inches of water flowing over it. Water also flowing across Jennys Branch Road in downtown Whitley City.								
	<b>Whitley</b>								
	17	0915EST			0	0	0	0	Flood
		1900EST							
<b>KYZ044</b>	Highway 92 West near Jellico Creek flooded. Wolfe Creek River Road also flooded.								
	<b>Fleming</b>								
	17	0916EST			0	0	0	0	Flood
		1900EST							
<b>KYZ114</b>	Muses Mills Fire Department building flooded. Route 111, at Grange City and Hillsboro, and Stocton Road, off Route 111, closed due to high water.								
	<b>Owsley</b>								
	17	0930EST			0	0	136K	0	Flood
		1900EST							
<b>KYZ087</b>	Four to 5 inches of water flowing across Highway 1350.								
	<b>Bell</b>								
	17	0930EST			0	0	0	0	Flood
		1900EST							
<b>KYZ119-119</b>	Highway 66 North of Pineville flooded.								
	<b>Martin</b>								
	17	0945EST			0	0	0	0	Flood
		2145EST							
<b>KYZ109-109-109</b>	Highway 40 near Beauty flooded.								
	<b>Magoffin</b>								
	17	1120EST			0	0	0	0	Flood
		1300EST							
<b>KYZ050</b>	River Road and Route 7 near Salyersville closed due to high water.								
	<b>Montgomery</b>								
	17	1137EST			0	0	0	0	Flood
		1700EST							
<b>KYZ110-110</b>	Harpers Ridge Road and Spencer road, State Road 713, closed due to high water 6 miles southeast of Mount Sterling.								
	<b>Floyd</b>								
	17	1200EST			0	0	0	0	Flood
	18	1300EST							
<b>KYZ107</b>	Kentucky Highway 1427, 2 and 1/2 miles from Highway 23, had 6 to 8 inches of water flowing over it. Highland Avenue in downtown Prestonsburg under water. Abbott Creek flowing over road off Highway 23 near Prestonsburg. Water flowing over Spewing Camp Road in McDowell.								
	<b>Johnson</b>								
	17	1200EST			0	0	0	0	Flood
	18	1300EST							
<b>KYZ059</b>	Route 825 under water. Route 40 near Wolf Springs under water. Some evacuations were necessary.								
	<b>Powell</b>								
	17	1205EST			0	0	0	0	Flood
	19	2045EST							
<b>KYZ111</b>	Emergency Management officials reported numerous roads closed countywide due to flooding, including Highway 77 off Highway 15, Adams Ridge Road near Clay City, Highway 15 near Bowan and along Middle Fork, Cane Creek Road in northern Powell County, and Hardwick Creek Road in southwest Powell County.								
	<b>Lee</b>								
	17	1220EST			0	0	0	0	Flood
		1900EST							

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## KENTUCKY, Eastern

Highway 52 West, between Crystal and Whynot, near the Estill County line, closed due to high water. Little Creek, near Heidelberg, out of its banks and flowing across nearby roadway.

### **KYZ120-120**

#### **Pike**

17	1350EST	0	0	0	0	Flood
	2130EST					

Red Creek and Slones Branch, off of U.S. Highway 460 in Millard, had exceeded their banks and were flooding nearby roadways. Highway 612 near South Williamson had water flowing over it.

### **KYZ118**

#### **Letcher**

17	1350EST	0	0	0	0	Flood
	1700EST					

Water flowing across Highway 404 in David.

### **KYZ113**

#### **Knott**

17	1358EST	0	0	0	0	Flood
	1700EST					

Caney road, off of Highway 899 near Pippa Passes covered with water.

### **KYZ115**

#### **Perry**

17	1546EST	0	0	0	0	Flood
	1900EST					

Highway 476 flooded near Jakes Branch.

### **KYZ104**

#### **Elliott**

17	1600EST	0	0	0	0	Flood
	1900EST					

Highway 719 flooded south of Fannin.

### **KYZ068**

#### **Rockcastle**

17	1635EST	0	0	0	0	Flood
18	0630EST					

Highway 1329 in Mount Vernon and Livingston closed due to high water. Highway 1912 and 1955 at Red Hill also closed due to high water.

### **KYZ058>059-111-114**

#### **Estill - Powell - Lee - Owsley**

17	2115EST	0	0	0	0	Flood
19	0225EST					

The South Fork of the Kentucky River at Booneville crested at 28.80 feet or 1.80 feet above flood stage on 09/18/2004 at 06:00 EST. The Kentucky River at Heidelberg crested at 21.30 feet or 1.30 feet above flood stage on 09/18/2004 at 11:00 EST. The Red River at Clay City crested at 20.03 feet or 1.03 feet above flood stage on 09/18/2004 at 14:00 EST. Widespread heavy rain from the remnants of Hurricane Ivan lead to minor flooding at all three forecast points. The passage of the remnants of Hurricane Frances the week before had left streams at 90% above mean daily stream flow.

### **KYZ079>080-084>085**

#### **Pulaski - Laurel - McCreary - Whitley**

18	0227EST	0	0	0	0	Flood
19	1328EST					

Cumberland River at Williamsburg crested at 23.99 feet, or 2.99 feet above flood stage at 21:58 EST on 09/18/2004. Widespread heavy rain from the remnants of Hurricane Ivan lead to minor flooding. The passage of the remnants of Hurricane Frances the week before had left streams at 90% above mean daily stream flow.

## KENTUCKY, Northeast

### **KYZ101>103-105**

#### **Greenup - Carter - Boyd - Lawrence**

08	1300EST	0	0	70K		Flood
09	0500EST					

Remnants of Hurricane Frances caused about a 30 hour rain event, from the afternoon of the 7th into the evening hours of the 8th. The heaviest rains fell during the morning of the 8th. Storm total amounts of 3 to 5 inches were widespread, with isolated amount of 5 to 6 inches. Some specific preliminary amounts included Olive Hill with 5.5 inches, Grayson Lake 5.1 inches, Charley and Blaine in Lawrence County with 5.0 inches, Cannonsburg had 4.8 inches, Grayson and Ashland measured 4.4 inches, while Warnock observed 3.5 inches.

Since the ground was dry, previous to this event, flooding was restricted mostly to roads and the usual low lying areas. However, some evacuations did occur in the town of Olive Hill. The Little Sandy River crested at 22.9 feet in Grayson early on the 9th. Flood stage is 21 feet.

This event set the stage for more significant high water, to follow later in the month.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## KENTUCKY, Northeast

### **KYZ101>103-105 Greenup - Carter - Boyd - Lawrence**

17	0810EST	0	0	1M	Flood
20	2200EST				

The remnants of Hurricane Ivan dumped 3.5 to 5.5 inches of rain, during a 30 hour period from late morning on Thursday the 16th, into the late afternoon of Friday the 17th. The heaviest rain was during the morning hours of the 18th. Some preliminary totals included Princess 5.3 inches, Grayson Lake 5.1 inches, Oldtown 4.6 inches, Warnock 4.5 inches, Grayson and Charley 4.3 inches, Greenup 4.0 inches, Cannonsburg 3.9 inches, and Louisa 3.7 inches.

Since the ground was still recovering from the effects of Hurricane Frances 8 days earlier, streams crested higher in most areas.

There was no structural damage to roads or bridges in Lawrence County, but a few homes had minor water damage. Boyd County had about 45 homes with minor to major damage. Several churches had water inside. Greenup County had evacuations along Tygarts Creek. The county reported about \$250,000 in damage to roads and bridges. Small streams in Carter County damaged roads. A bridge off Route 986 was destroyed.

On the evening of the 17th, the Little Sandy River rose above the 21 foot stage at Grayson. The crest was near 25.7 feet around dawn on the 18th. This was slightly higher than the 25.4 foot crest back in May of 2003. Yet, in March 2002, the crest was 29.2 feet. Erosion of river banks and flooded fields were common with this current event.

Since the axis of heavier rain went upstream to the Pittsburgh vicinity, the Ohio River rose on the 18th and 19th. The river crested at 54.2 feet at Ashland on the 20th. Flood stage is 52 feet. The crest on the Ohio River at Greenup Lock and Dam was 53.5 feet, remaining just below the 54 foot flood stage.

## KENTUCKY, Northern

### **Lewis County**

4 W Vanceburg	17	0900EST			0	0		Flash Flood
		1400EST						

Several roads were flooded and closed. A pickup truck was washed away in floodwaters from Salt Lick Creek.

### **KYZ099**

#### **Mason**

17	1000EST	0	0	Flood
	1400EST			

The remnants of Hurricane Ivan brought persistent heavy rains to northeast Kentucky. Three to four inches fell across Mason County, causing numerous flooded roads. A number of the roads were closed to the east of Maysville.

## KENTUCKY, Southwest

### **KYZ001>022**

**Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd**

22	0000CST	0	0	Drought
30	2359CST			

This was the driest September on record for western Kentucky. At Paducah, the monthly rainfall was only 0.02 inch, which set a record not only for driest September but also for driest month. Lawns and fields turned brown. Due to increasing fire danger, outdoor burning bans were imposed in all western Kentucky counties after a couple of brush fires burned up to 10 acres. The dry weather set in too late to harm crops. In fact, the timing of the dry weather helped farmers harvest one of their best crops on record.

### **KYZ018>019**

#### **Henderson - Daviess**

22	0300CST	0	0	5.5M	Flood
27	1700CST				

Despite very dry weather in September, the Ohio River rose above flood stage at several gage points, mostly above the confluence with the Wabash River. The flooding was due to copious rainfall in the upper Ohio Valley from the remnants of Hurricanes Frances and Ivan. Around 20,000 acres of soybeans were estimated to be under water in Henderson and Daviess Counties. This translates into an estimated crop loss of several million dollars. Most of the corn crop was mature enough to be harvested before the flooding. Nearly all of the acreage flooded by the river was uninhabited bottomland or cropland. At Newburgh Lock on the Indiana side, the river crested at 41.36 feet on the evening of the 24th. This is about 3 feet above the 38-foot flood stage. At Mount Vernon, Indiana, the river crested at 35.9 feet on the afternoon of the 25th. Flood stage at Mount Vernon is 35 feet. Much of the cropland flooding in Daviess County was in the Stanley and Maceo areas.

## LAKE MICHIGAN

### **Bay Of Green Bay S Of Ln Marinette To Fish Creek Wi**

Green Bay Light	15	1446CST	0	0	Marine Tstm Wind
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# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## LAKE MICHIGAN

Lm Rock Is Psg To  
Sheboygan Wi Ewd  
Byd 5Nm To Mid Line  
Of Lake

24 ESE Washington Island 15 1509CST 0 0 Marine Tstm Wind

Bay Of Green Bay  
Cedar R To Rock Is  
Psg To Marinette To  
Fish Cr Wi

Sister Bay 15 1522CST 0 0 Marine Tstm Wind

Strong winds developed across the Bay of Green Bay and the waters of Lake Michigan behind a line of thunderstorms.

Lm 5Nm W Of  
Mackinac Bridge To  
Manistee Mi Nwd  
Beyond 5Nm Offshore  
To Mid Line Of Lake

15 W South Fox Island 15 1650EST 0 0 Marine Tstm Wind

## LOUISIANA, Northeast

NONE REPORTED.

## LOUISIANA, Northwest

NONE REPORTED.

## LOUISIANA, Southeast

St. Bernard Parish  
Delacroix

04 1200CST 1 0 Lightning

An eighteen year old man was struck and killed by lightning while fishing in a boat.  
M18BO

LAZ040-058-060>062-  
066>070 St. Tammany - St. John The Baptist - St. Charles - Upper Jefferson - Orleans - Lower Terrebonne - Lower Lafourche - Lower Jefferson - Lower Plaquemines - Lower St. Bernard

15 1000CST 0 0 4.0M Storm Surge  
16 0600CST

LAZ040-058>070 St. Tammany - St. John The Baptist - Upper Lafourche - St. Charles - Upper Jefferson - Orleans - Upper Plaquemines - Upper St. Bernard - Upper Terrebonne - Lower Terrebonne - Lower Lafourche - Lower Jefferson - Lower Plaquemines - Lower St. Bernard

15 1000CST 0 0 11.8M Hurricane/Typhoon  
16 0600CST

Hurricane Ivan moved steadily northward across the north central Gulf of Mexico on September 15th before turning north-northeast and making landfall near Gulf Shores, Alabama as a Category 3 hurricane during the early morning of September 16th.

Hurricane force winds affected the lower portion of Plaquemines Parish. The highest sustained wind recorded in southeast Louisiana was at the NOAA automated weather station at the Southwest Pass of the Mississippi River with sustained winds of 72 knots (83 mph) and gusts to 87 knot (100 mph) The weather instruments are located at approximately 100 ft above the sea surface. Wind gusts of around 60 knot (69 mph) were recorded at an automated weather station along the coast near Point a-la Hache. Outside of the lower Plaquemines Parish area, tropical storm force winds were recorded from coastal Terrebonne Parish northeast through the New Orleans area to eastern St. Tammany Parish. The lowest barometric pressure recorded was 983.6 mb at the Southwest Pass automated weather station.

Lower portions of Plaquemines Parish suffered the greatest wind damage. Several school buildings suffered roof damage as well as several public government buildings. Around 100 mobile homes had some type of wind damage, with approximately 30 mobile homes having major damage or were destroyed. Seven houses suffered major wind damage. 50 power poles were also downed by high winds. In lower St. Bernard parish about a dozen houses had some type of wind damage. In other areas of southeast Louisiana, generally only minor wind damage was reported with power outages. At least 55, 000 customers of the local electric power company experience power outages.

The highest storm surge was confined mostly to areas east of the Mississippi River where storm surge averaged 3 to 5 feet above normal except locally higher in some inlets. The highest storm surge reading was 7.6 feet NGVD at Bayou Dupre in St. Bernard

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## LOUISIANA, Southeast

Parish. The storm surge flooded low lying property and roadways outside of the hurricane protection levees in Orleans, St. Bernard and Plaquemines Parishes. Around Lake Pontchartrain and west of the Mississippi River, storm surge was 2 to 4 feet above normal.

No tornadoes were reported in southeast Louisiana and storm total rainfall was fairly light. The greatest storm rainfall total was 2.5 inches at Buras in Plaquemine Parish.

Due to the threat posed by the powerful hurricane, many area residents evacuated the New Orleans metropolitan area at the urging of local emergency management officials. State Police estimated that approximately 600,000 people evacuated from southeast Louisiana including the the New Orleans metro area prior to the hurricane. Another 400,000 other coastal residents from Florida, Alabama and Mississippi moved through the area as they evacuated to the west, away from the expected landfall of hurricane Ivan. In an area west of Kenner, eastbound lanes of Interstate Highway 10 were reversed to handle west bound traffic. Traffic jams developed during the evacuation process due to the large number of evacuees.

There were no direct fatalities related to Hurricane Ivan, however four elderly residents of southeast Louisiana died during the large scale evacuation in southeast Louisiana.

The Louisiana Dept of Insurance estimated that insured property damage was approximately \$7.9 million. In a manner utilized by the National Hurricane Center for estimating storm damage, the insured damage estimate was doubled to arrive at total dollar damage of \$15.8 million. Approximately 75% of the damage was estimated to be related to wind - \$11.8 million. Approximately 25% of the storm damage was estimated to be related to storm surge - \$4.0 million.

**LAZ066>069**

**Lower Terrebonne - Lower Lafourche - Lower Jefferson - Lower Plaquemines**

22	2100CST	0	0	15K	Storm Surge
23	1800CST				

**LAZ066>069**

**Lower Terrebonne - Lower Lafourche - Lower Jefferson - Lower Plaquemines**

22	2100CST	0	0	0	Tropical Storm
23	1500CST				

The remnant circulation of Hurricane Ivan moved back into the Gulf of Mexico and regenerated into a tropical storm late on September 22nd. The weak tropical storm moved west to northwest and passed south of the southeast Louisiana coast before making landfall late on September 23rd near the Louisiana-Texas border. Weather impacts on the coast were generally minimal. A few wind gusts to tropical storm strength occurred on the coast. The highest wind gust reported was 42 kt (48 mph) at the automated NOAA weather station at the Southwest Pass of the Mississippi River. The weather station is located about 100 feet above the sea surface. A peak gust of 33 knot (38 mph) was recorded at an automated weather station in Tambour Bay of Terrebonne Parish. Minimum pressure was 1012.2 mb at Tambour Bay.

Storm surge was generally 2 to 3 feet above normal. The highest storm surge reading was 3.38 ft NGVD at Caillou Bay southwest of Cocodrie in Terrebonne Parish. A few roads and some low lying property were flooded from Grand Isle west to the lower portions of Terrebonne Parishes.

Total storm damage was estimated at \$15 thousand dollars or less, mainly from minor coastal flooding.

## LOUISIANA, Southwest

NONE REPORTED.

## MAINE, North

NONE REPORTED.

## MAINE, South

NONE REPORTED.

## MARYLAND, Central

NOT RECEIVED.

## MARYLAND, Northeast

**Cecil County**

Charlestown to	18	0215EST	2	0	Thunderstorm Wind (G61)
Colora		0220EST			

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## MARYLAND, Northeast

Severe thunderstorms caused wind damage in Charlestown and Colora. Two people were killed in Colora after a large tree fell onto the house they were sleeping in. About six large trees were uprooted in Colora. Two other homes were damaged by fallen trees. Several large tree limbs were also torn away. One shed was destroyed by the wind. Wind speeds were estimated at 70 mph. In Charlestown, several large trees were knocked down. The elementary school suffered minor structural damage. M?PH, F?PH

### Cecil County

#### Elkton

18	1340EST 1700EST	0	0	Flash Flood
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### MDZ008

#### Cecil

18	1700EST	0	0	1M	Flood
20	1700EST				

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused very heavy rain to fall during the late morning and early afternoon of the 18th in the eastern part of the county. Flooding was reported along the Big Elk Creek along Maryland State Route 7. Runoff from the heavy rain also caused flooding along the Susquehanna River which affected Port Deposit the most. Damage was estimated at one million dollars. Storm totals included 4.25 inches in Elkton.

### Kent County

#### Massey

28	1324EST	0	0	Thunderstorm Wind (G50)
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A severe thunderstorm knocked down several wires and large tree limbs in Massey.

### Queen Anne'S County

#### Countywide

28	1340EST 1730EST	0	0	Flash Flood
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The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the afternoon of the 28th. Doppler Radar storm total estimates ranged between 2 and 5 inches with the highest amounts toward the Kent County border. Stream flooding caused several roads in the county to be closed. Specific storm totals included 2.65 inches in Stevensville.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### Kent County

#### Countywide

28	1340EST 1830EST	0	0	Flash Flood
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The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the afternoon of the 28th. Doppler Radar storm total estimates ranged between 3 and 6 inches with the highest amounts toward the Cecil County border. Stream flooding caused numerous roads in the county to be closed. Specific storm totals included 6.08 inches in Galena.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### Cecil County

#### Cecilton

28	1345EST 1400EST	0	0	Thunderstorm Wind (G50)
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A couple of severe thunderstorms knocked down a few trees, large limbs and wires in southeastern Cecil County.

### Cecil County

#### Countywide

28	1415EST 2248EST	0	0	Flash Flood
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The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the afternoon and early evening of the 28th. Doppler Radar storm total estimates ranged between 3 and 6 inches with the highest amounts toward the New Castle County border. Stream flooding caused several roads in the county to be closed. The Big Elk Creek at Elk Mills was above its 9 foot flood stage from 1007 p.m. through 1148 p.m. EDT on the 28th. It crested at 9.3 feet at 1045 p.m. EDT. Specific storm totals included 6.51 inches in Fair Hills, 3.69 inches in Elkton and 3.66 inches at the Conowingo Dam.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## MARYLAND, Northeast

**Talbot County**  
**St Michaels**

wring the tropical moisture over the area even further.

**28 1600EST 0 0 Thunderstorm Wind (G56)**

A severe thunderstorm knocked down a couple of large trees in St. Michaels and tore some shingles from the roof of one home.

## MARYLAND, South

**Dorchester County**  
**5 NNW Honga**

**30 0650EST 0.8 30 0 0 Tornado (F0)**

Waterspout came onshore south of Taylors Island, and continued across a marshy area before dissipating.

## MARYLAND, West

**MDZ001**

**Garrett**

**08 1800EST 0 0 Flood**  
**09 0000EST**

Rain from the remnants of Hurricane Frances began early on the 8th and ended early on the 9th. By 7 PM EDT on 8th, Casselman River went out of its banks, near Grantsville. (FRANCES)

**MDZ001**

**Garrett**

**17 2100EST 0 0 Flood**  
**18 0000EST**

A few roads were flooded near Grantsville. (IVAN)

## MASSACHUSETTS, Central and East

**Franklin County**  
**Greenfield**

**18 1015EST 0 0 10K Flash Flood**  
**1415EST**

Deerfield and Green Rivers

**Hampshire County**  
**Goshen**

**18 1330EST 0 0 Flash Flood**  
**1500EST**

Lowland flooding

Heavy rainfall associated with the remains of Ivan caused flash flooding in Franklin and Hampshire Counties in western Massachusetts. Storm totals of 3 to 5 inches were widely observed and caused rapid rises on the Deerfield and Green Rivers in Franklin County. The two rivers caused minor flooding of their respective low lying areas. In Hampshire County, a trained spotter reported several small brooks out of their banks which flooded low lying areas and caused minor damage. No injuries were reported.

## MASSACHUSETTS, West

**Berkshire County**  
**Great Barrington**

**18 0800EST 0 0 Flash Flood**  
**0900EST**

Gilmore Avenue and Seekonk Roads flooded.

**Berkshire County**  
**Hinsdale**

**18 0800EST 0 0 Flash Flood**  
**0900EST**

Breach in metal supports of a dam spillway along the Plunkett River caused flooding on Commonwealth Avenue. Part of the Conrail tracks were washed out.

**MAZ001**

**Northern Berkshire**

**18 1230EST 0 0 Flood**  
**1455EST**

The Hoosic River exceeded its flood stage of 9.0', cresting at 9.12' at 13:30 EST on 9/18/04 at the Williamstown gage.

The remnants of Hurricane Ivan moved across the region during September 17th and 18th, dropping anywhere from three to locally in excess of six inches of rain in many locations across Eastern New York and adjacent Western New England. Hardenburg, in Ulster County, unofficially reported the most with 7.50" of rainfall during the two day event. The heavy rains combined with an unusually saturated ground and a high water table from previous heavy rains, produced significant runoff and resultant flooding across the region. The majority of flood damage sustained from the heavy rainfall was confined to roadways, with many roads, bridges and culverts being washed out by floodwaters. Landslides and serious erosion occurred in the Town of Hardenburg in Ulster County as the Esopus Creek overflowed its banks. Ulster County was especially hard hit as the Emergency Management Official for that county has estimated up to 2 Million dollars of damage to infrastructure, while little if any personal property damage was noted. That county has been declared eligible for aid through FEMA. Personal damage, estimated at nearly half a million dollars was noted in Schoharie County. Additional damage occurred to several docks and boats moored along Catskill Creek and the Mohawk River. Low-lying portions of mobile home parks in the Village of Ravena were also evacuated due to flooding during this event. While power was temporarily shut off and some telephone service was disrupted in many of the flooded areas, no serious injuries were reported.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## MICHIGAN, East

NONE REPORTED.

## MICHIGAN, Extreme Southwest

NONE REPORTED.

## MICHIGAN, North

### **Kalkaska County**

<b>Kalkaska</b>	<b>11</b>	<b>2222EST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
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An isolated severe thunderstorm produced marginally large hail in Kalkaska.

## MICHIGAN, Upper

NONE REPORTED.

## MICHIGAN, West

### **Newaygo County**

<b>Newaygo</b>	<b>03</b>	<b>1600EST</b>			<b>0</b>	<b>0</b>	<b>5K</b>	<b>5K</b>	<b>Hail (0.88)</b>
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Law enforcement five miles south of Newaygo reported seven eighths inch diameter hail.

## MINNESOTA, Central and South Central

### **Rice County**

<b>3 W Morristown</b>	<b>05</b>	<b>1454CST</b>			<b>0</b>	<b>0</b>			<b>Hail (0.75)</b>
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Dime sized hail fell near Upper and Lower Lake Sakatah.

### **Freeborn County**

<b>2 NE Albert Lea</b>	<b>05</b>	<b>1520CST</b>			<b>0</b>	<b>0</b>			<b>Funnel Cloud</b>
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A trained spotter reported a funnel cloud just northeast of Albert Lea.

### **Kanabec County**

<b>6 N Mora</b>	<b>13</b>	<b>2045CST</b>			<b>0</b>	<b>1</b>			<b>Lightning</b>
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Lightning struck a pickup truck on Highway 65. The driver, a 22-year-old man, was stunned by the bolt. He was found shaking and somewhat incoherent but quickly recovered.

### **Redwood County**

<b>Lamberton</b>	<b>13</b>	<b>2053CST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G62)</b>
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A 71 MPH wind gust was recorded by an automated weather sensor at a school.

### **Brown County**

<b>Springfield</b>	<b>13</b>	<b>2115CST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>
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A few trees were downed.

### **Brown County**

<b>New Ulm</b>	<b>13</b>	<b>2130CST</b>			<b>0</b>	<b>0</b>			<b>Lightning</b>
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A home on Garden Street suffered electrical damage after a lightning strike.

### **Brown County**

<b>Sleepy Eye</b>	<b>13</b>	<b>2130CST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>
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A few trees were downed.

### **Brown County**

<b>New Ulm</b>	<b>13</b>	<b>2230CST</b>			<b>0</b>	<b>0</b>			<b>Lightning</b>
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A residence on South Jefferson Street suffered damage to a tree, transformer, doorbell, and front door after lightning struck.

### **Faribault County**

<b>Countywide</b>	<b>14</b>	<b>2030CST</b> <b>2345CST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
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### **Freeborn County**

<b>Countywide</b>	<b>14</b>	<b>2030CST</b> <b>2345CST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
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## MINNESOTA, Central and South Central

### **Steele County**

#### **Countywide**

**14 2030CST**  
**2345CST**  
**0 0**  
**Flash Flood**

**MNZ078-084>085-  
091>093**

#### **Goodhue - Waseca - Steele - Martin - Faribault - Freeborn**

**14 2345CST**  
**19 1000CST**  
**0 0 6.7M 21.6M**  
**Flood**

Five to 13 inches of rain fell across South Central Minnesota between 5 PM on the 14th and 5 AM on the 15th. This amount of rainfall caused widespread major flooding in Freeborn, Steele, Faribault, and Martin counties. Over \$6 million dollars in property damage and nearly \$22 million dollars in crop damage were attributed to high water in these counties. Areas of minor flooding were also reported in southern Waseca and Goodhue counties.

In Freeborn County \$2.1 million in property damage was reported. FEMA reported 1 home was destroyed by flood waters, major flood damage to 13 homes, minor damage to 84 homes, and 292 homes affected by flood waters across the county. The hardest hit areas were Albert Lea, Hollandale, Riceland Township, and Shell Rock Township where numerous county roads, fields, waterways, and low lying areas were underwater for up to 4 days. Road crews had to repair several road washouts after flood waters subsided. Significant flooding was reported on the Shell Rock River and Turtle Creek in addition to Fountain Lake and Albert Lea Lake. An earthen dam had to be built around the village of Hollandale to save the community from Turtle Creek's flood waters. Two thirds of the homes in town sustained flood damage. Water ran over the top of the Geneva Lake Dam, flooding potato, onion, and carrot fields. Crop losses in this area totaled \$4 million. In Albert Lea the following roads were closed by flooding: Front Street, East and West Main, and Highway 65. In Alden, Morin Lake overflowed and street and basement flooding was reported. Interstate 90 was closed for several hours due to high water near Alden. Highway 251 was closed in Maple Island. Road and basement flooding was also reported in Hartland and Myrtle. Rainfall totals included 13.00 inches 5 miles southwest of Alden, 12.50 inches 4 miles north of Albert Lea, 10.66 inches in north Albert Lea, 10.25 inches in Hayward, 9.8 inches in Powers, 8.50 inches south of Emmons, and 8.00 inches in Bancroft and south Albert Lea.

In Steele County rainfall amounts of 6 to 13 inches led to "unprecedented flooding". A total of \$2.8 million in property damage was recorded (\$1.4 million home damage, \$70,000 business damage, \$1.35 million infrastructure damage). Much of the damage was caused by major flooding along the Straight River and Turtle Creek across the southern portion of the county. The cities of Blooming Prairie and Ellendale were hardest hit. County officials reported major flood damage to 30 homes, minor damage to 400 homes, and 431 homes affected by flood waters. In addition 4 county businesses sustained major flood damage, 4 businesses reported minor damage, and 8 businesses were affected by flood waters. Twenty-four people in the county had to be rescued from flood waters. Numerous roads, waterways, and low lying areas were under water for up to 5 days. At one time up to 75% of county roads were closed by high water. After the water receded significant damage to roads, ditches, and bridges was apparent. Blooming Prairie High School and Elementary School were closed due to flood damage. The Straight River crested in Blooming Prairie on the 18th and remained out of its banks through the 19th. County road 212 was under water in town when the river crested. Several parks along the Straight River and its tributaries in Ellendale, Blooming Prairie, and Owatonna sustained severe water damage. In an effort to save homes on the west side of Blue Earth, volunteers sandbagged along the river. In Owatonna, a campground along the river had to be evacuated and nearby Lake Kohlmer was flooded. Near Ellendale the Straight River flooded several farms along Highway 30. A group home along Turtle Creek in Owatonna had to be evacuated after the river spilled into the facility. Overflow from Maple Creek also caused major park damage. Countywide 20% of soybean and corn crops and 10% of sweet corn crops were lost to flooding, which resulted in \$10.4 million in losses.

In Faribault County \$1.2 million in property damage was reported. FEMA reported major flood damage to 15 homes, minor damage to 29 homes, and 272 homes affected by flood waters across the county. Numerous roadways had to be barricaded after road and culvert washouts occurred. Roads closed by flooding included highways 30, and 169 in addition to county routes 121, 108, 119, 118, 219, 109, 2, 16, 21, and 13. Interstate 90 was also closed in the eastern portion of the county. In Wells many streets were closed by high water. Half Moon Park was also flooded. Road and basement flooding was also reported in Winnebago and Minnesota Lake. In Kiester a school was flooded and phone service was out in some areas for up to a week. In Bricelyn nearly 40% of homes were damaged by flood waters. In Blue Earth the Blue Earth River flowed into at least 2 homes and flooded numerous basements, roads, and parks. The city sustained nearly \$35,000 in infrastructure damage, even after sandbagging along the river. The flooding finally began to subside on the 17th. Countywide 10% of soybean crops were lost to flooding, which resulted in \$3.5 million in losses. Rainfall totals included 10.20 inches in Bricelyn, 10.08 inches south of Walters, 6.73 inches in Wells, 5.00 inches in Blue Earth, and 4.86 inches in Winnebago.

In Martin County \$570,000 in property damage was reported (\$500,000 public property, \$70,000 private property). Up to 90 homes were affected by flooding due to storm sewer overflow, mainly across the southern third of the county. Five to 7 inches of rain was commonplace across the county with up to 10 inches in the Ceylon and East Chain areas. A total of 6.40 inches of rain was recorded in Fairmont. Fairmont Junior/Senior High was closed due to flood damage. A number of homes in the Canyon Drive area of Fairmont suffered basement flooding and were surrounded by water for several hours. The bridge over Cedar Creek in Cedar Creek Park was washed out. In addition, the following roads in Fairmont were closed due to flooding: Lake Aires Road, Winnebago Avenue, and Hall Street. Basement and street flooding was reported in Truman. Most of the flooding across Martin County had receded by the morning of the 16th. Countywide 10% of soybean crops were lost to flooding, which resulted in \$3.7 million in losses.

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## MINNESOTA, Central and South Central

In Waseca County 3.54 inches of rain was recorded in Waseca. Up to 6 inches of rain flooded roads in the southern portion of the county. In Janesville roads and basements were flooded. Basement flooding was also reported in New Richland and Waseca.

In Goodhue County 3.92 inches of rain was recorded in Zumbrota and 5 inches of rain was estimated in Pine Island. The Middle Fork and the North Branch of the Zumbro River overflowed their banks. The rivers crested in Pine Island during the afternoon of the 15th and fell below flood stage that evening. Pine Island Golf Course was flooded in addition to County Road 24 and 275th Avenue.

### **MNZ066-070-078**

#### **McLeod - Dakota - Goodhue**

15 1100CST 0 0 0.70K Strong Wind  
1600CST

Gradient winds gusting up to 45 MPH downed trees and branches in McLeod, Goodhue, and Dakota counties. In McLeod County power lines were damaged in 4 locations across Hutchinson. One downed power line started a brush fire just north of town along Highway 15. In Goodhue County a 30 foot tall tree was downed along East 11th Street in Zumbrota. In Dakota County 1000 customers lost power after branches fell onto power lines in Hastings.

### **Stearns County**

**Sartell** 23 1220CST 0 0 Thunderstorm Wind (G55)

Trees and power lines were downed. A camper trailer was blown onto its side.

### **Carver County**

**Chaska** 23 1230CST 0 0 Thunderstorm Wind (G52)

A large tree was downed onto a power line, setting it on fire. A fence was also damaged by the felled tree. The time was estimated.

### **Morrison County**

**Little Falls** 23 1235CST 0 0 Thunderstorm Wind (G55)

Several trees were downed, including one in Pine Grove Park.

### **MNZ060**

#### **Hennepin**

23 1245CST 0 2 Strong Wind

Gusty winds ahead of a thunderstorm caused a rig platform on a high rise building along Nicollet Mall to spin around and crash into a window on the 36th floor. Two men who were washing windows from the platform sustained minor injuries. In addition, two people had to be rescued after the gusty wind caused their boat to capsiz on Lake Nokomis.

### **Ramsey County**

**Roseville** 23 1250CST 0 0 Thunderstorm Wind (G50)

A tree was downed.

### **Ramsey County**

**Arden Hills** 23 1251CST 0 0 Thunderstorm Wind (G50)

A tree was downed.

### **Anoka County**

**Coon Rapids** 23 1252CST 0 0 Thunderstorm Wind (G52)

A few trees were downed.

### **Anoka County**

**Fridley** 23 1252CST 0 0 Thunderstorm Wind (G52)

A few trees were downed.

### **Anoka County**

**Anoka Co Blaine Arpt** 23 1255CST 0 0 Thunderstorm Wind (G56)

A 64 MPH wind gust was recorded at the airport.

### **Ramsey County**

**St Paul** 23 1310CST 0 0 Thunderstorm Wind (G58)

Several trees up to 3 feet in diameter were downed onto roads, roofs, and parked cars in the Dale Street and Marshall Avenue area.

### **Anoka County**

**Oak Grove** 23 1312CST 0 0 Thunderstorm Wind (G52)

A few trees were downed.

### **Ramsey County**

**Maplewood** 23 1315CST 0 0 Thunderstorm Wind (G52)

A few trees were downed onto a power line, setting them on fire. The time was estimated.



# Storm Data and Unusual Weather Phenomena

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## MINNESOTA, Central and South Central

<b>Anoka County</b>									
Centerville	23	1320CST			0	0			Thunderstorm Wind (G52)

A few trees and power lines were downed near Centerville Road and Main Street.

<b>Isanti County</b>									
8 W Cambridge	23	1320CST			0	0			Thunderstorm Wind (G55)

A spotter estimated a wind gust between 60 and 65 MPH near the intersection of highways 47 and 95.

<b>Isanti County</b>									
1 W Cambridge	23	1325CST			0	0			Thunderstorm Wind (G52)

A tree was downed.

<b>Chisago County</b>									
Harris	23	1335CST			0	0			Thunderstorm Wind (G55)

Three trees were downed.

<b>Kanabec County</b>									
Countywide	23	1335CST			0	0			Thunderstorm Wind (G55)

A few trees were downed and shingles were damaged in South Fork Township. The time was estimated.

<b>Washington County</b>									
1 NW Stillwater	23	1335CST			0	0			Thunderstorm Wind (G52)

A power line was downed along Highway 96 at Norrel Ave.

## MINNESOTA, Northeast

<b>St. Louis County</b>									
Orr	04	2330CST			0	0			Lightning

Lightning caused a fire that severely damaged the main building at a resort near Orr.

<b>Crow Wing County</b>									
1 W Nisswa	23	1240CST			0	0			Thunderstorm Wind (G60)

On Roy Lake, a sixty-foot reinforced TV antenna fell on a house. There was also severe damage to a dock and pontoon boat.

<b>Cass County</b>									
5 SE Pine River to Pine River	23	1330CST 1335CST			0	0			Thunderstorm Wind (G60)

The strong winds lasted five minutes, uprooting 25 to 30 trees, including four 4-foot diameter oaks.

<b>Crow Wing County</b>									
Brainerd	23	1355CST			0	0			Thunderstorm Wind (G60)

Numerous trees were blown down.

<b>Crow Wing County</b>									
Cross Lake	23	1355CST			0	0			Thunderstorm Wind (G60)

Numerous trees were blown down.

<b>Crow Wing County</b>									
Nisswa	23	1355CST			0	0			Thunderstorm Wind (G60)

Numerous trees were blown down.

<b>Cass County</b>									
Lake Shr	23	1405CST			0	0			Thunderstorm Wind (G60)

Numerous trees were blown down.

<b>Cass County</b>									
Pine River	23	1405CST			0	0			Thunderstorm Wind (G60)

Numerous trees were blown down.

<b>Cass County</b>									
Walker	23	1405CST			0	0			Thunderstorm Wind (G60)

Numerous trees were blown down.

<b>Pine County</b>									
Hinckley	23	1420CST			0	0			Thunderstorm Wind (G60)

Power lines were blown down.

# Storm Data and Unusual Weather Phenomena

September 2004

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Killed	Injured	Property	Crops						
<b><u>MINNESOTA, Northeast</u></b>									
<b>Aitkin County</b>									
Aitkin	23	1425CST			0	0			Thunderstorm Wind (G60)
Trees and power lines were blown down.									
<b>Itasca County</b>									
Deer River	23	1500CST			0	0			Thunderstorm Wind (G60)
Power lines were blown down.									
<b>St. Louis County</b>									
Floodwood	23	1509CST			0	0			Thunderstorm Wind (G60)
Numerous trees were blown down.									
<b>Itasca County</b>									
Pengilly	23	1518CST			0	0			Thunderstorm Wind (G60)
Numerous trees were blown down.									
<b><u>MINNESOTA, Northwest</u></b>									
<b>Beltrami County</b>									
Bemidji	04	2006CST			0	0	10K		Lightning
A lightning strike ignited a small fire in the attic of a house.									
<b>Otter Tail County</b>									
8 SW Perham to 4 SW Perham	05	1420CST 1430CST	4	100	0	0	250K		Tornado (F2)
A tornado tracked through pasture, forest, and corn fields. Numerous trees were knocked down and one farmstead received extensive barn, shed, and home damage. Twelve head of cattle were killed. Several trees were toppled onto homes near Marion Lake. Farnyard debris was carried as far as Perham, about 7 miles northeast.									
<b>Otter Tail County</b>									
2 N New York Mills	05	1449CST			0	0			Thunderstorm Wind (G55)
Steel roofing was torn off a pole barn.									
<b>Becker County</b>									
13 WNW Ponsford	05	1525CST			0	0			Thunderstorm Wind (G52)
The wind gust occurred at Elbow Lake.									
<b>Hubbard County</b>									
3 N Dorset	05	1540CST			0	0			Thunderstorm Wind (G52)
A southwest to northeast swath of pine trees was blown down.									
<b>Mahnomen County</b>									
2 NE Naytahwaush	05	1600CST			0	0			Thunderstorm Wind (G55)
Large branches were blown down on power lines.									
<b>Clearwater County</b>									
10 SSW Bagley	05	1615CST			0	0			Thunderstorm Wind (G52)
Large branches were blown down.									
<b>Red Lake County</b>									
2 S Brooks	23	1429CST			0	0			Thunderstorm Wind (G54)
A MNDOT RWIS sensor detected the wind gust.									
<b>Roseau County</b>									
7 SSE Warroad	23	1653CST 1703CST			0	0			Thunderstorm Wind (G54)
Large tree branches were blown down.									
<b>Roseau County</b>									
7 NNW Warroad	23	1716CST			0	0			Thunderstorm Wind (G52)
Large tree branches were blown down near the border crossing.									
<b><u>MINNESOTA, Southeast</u></b>									
<b>Houston County</b>									
Mound Prairie	14	1710CST			0	0			Hail (0.88)

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## MINNESOTA, Southeast

### **Dodge County**

Countywide	14	2058CST			0	0	10K	15K	Flash Flood
	15	1000CST							

### **Mower County**

Countywide	14	2101CST			0	0	15K	15K	Flash Flood
	15	1000CST							

### **Olmsted County**

Countywide	14	2101CST			0	0	7.5K	10K	Flash Flood
	15	0500CST							

### **Fillmore County**

Countywide	15	0158CST			0	0	5K	8.5K	Flash Flood
		1000CST							

### **Winona County**

Countywide	15	0241CST			0	0	4K	5K	Flash Flood
		1000CST							

### **MNZ086>087-094>095 Dodge - Olmsted - Mower - Fillmore**

15	0400CST	1	0	1.2M	65K	Flood
17	1500CST					

M20IW

After a relatively dry start to the month, a potent late summer storm system brought very heavy rain to parts of southeast Minnesota and northeast Iowa on September 14 and September 15. Rain was most intense from near Mason City, Iowa through the Austin area (Mower County) to near Rochester (Olmsted County). There were many areas that had over 4 inches of rain, with isolated higher amounts. In fact, the highest unofficial totals were in the Blooming Prairie area (Dodge County) with 11.50 inches and 13.00 inches reported.

Flash flooding was the initial problem, but as all the rain drained into river basins, many of the regional rivers and creeks saw dramatic rises during the overnight hours of September 14 and into the morning of September 15. The Austin area saw very high to record crest levels on the Cedar River and creeks leading into it. For example, Turtle Creek at Austin had a record setting crest of 14.77 feet, while a record setting crest of 23.44 feet was established on the Cedar River at Lansing (Mower County). Other rivers affected included the Zumbro and Root, however flooding was not near as significant in these locations. Mower, Dodge and Olmsted counties were declared federal disaster areas.

Hardest hit was the Austin area, where flooding affected parts of the city and widespread sand bagging efforts took place. There were 350 homes in Mower County, which received flood damage, including 300 homes in Austin alone. A 20 year old man died on his way to work, when he walked into high water and was swept away. A 53 year old man also died of a heart attack, while assisting with sand bagging efforts.

## MINNESOTA, Southwest

### **Jackson County**

10.5 S Lakefield to 9 S Lakefield	05	1615CST	2	50	0	0	2K		Tornado (F0)
		1620CST							

A tornado damaged corn crops, trees, and an outbuilding on a farm.

### **Lyon County**

6 NE Marshall	13	1941CST			0	0			Hail (0.75)
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### **Nobles County**

Round Lake	15	0423CST			0	0			Flash Flood
		0600CST							

Rainfall of 5 inches caused widespread street flooding.

## MINNESOTA, West

NONE REPORTED.

## MINNESOTA, West Central

### **Traverse County**

8 NE Browns Vly to 8.5 NE Browns Vly	23	1353CST	0.7	50	0	0			Tornado (F1)
		1355CST							

A tornado touched down and traveled through a cornfield and a farmstead before dissipating. The tornado damaged several sheds and a travel trailer along with toppling a large grain bin. The storm traveled northwest across Lake Traverse and into South Dakota where another tornado touched down.

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## MISSISSIPPI, Central

Noxubee County  
2 S Macon

12 1620CST 0 0 0.10K Thunderstorm Wind (G43)

Two trees were blown down.

MSZ030>031-033-038>039-045>046-051>052-057>058-065>066-072>074  
Clay - Lowndes - Oktibbeha - Winston - Noxubee - Neshoba - Kemper - Newton - Lauderdale - Jasper - Clarke - Covington - Jones - Marion - Lamar - Forrest

16 0000CST  
1600CST 1 0 1.5M 500.8K Hurricane/Typhoon

Hurricane Ivan made landfall at 2:02 AM, September 16, near Gulf Shores, Alabama as a upper Category 3 hurricane. The western side of Ivan effected a large portion of Eastern Mississippi as the center moved north through Alabama. Thousands of trees were blown down across Eastern Mississippi during the event as well as hundreds of power lines. The strong wind itself did not cause much structural damage, however the fallen trees did. These downed trees accounted for several hundred homes, mobile homes and businesses to be damaged or destroyed. Most locations across Eastern Mississippi reported sustained winds between 30 and 40 mph with Tropical Storm force gusts between 48 and 54 mph. The strongest reported winds occurred in Newton, Lauderdale and Oktibbeha counties. A Mississippi mesonet site, in Newton, reported maximum sustained winds of 42 mph and peak gust of 54 mph. At Key Field in Meridian, maximum sustained winds were reported at 43 mph with a peak gust of 61 mph. The highest sustained and peak wind occurred at the Mississippi State Climate Lab in Starkville. This site reported maximum sustained winds of 52 mph and a peak gust of 64 mph.

Overall, rainfall totals were held in check as Ivan steadily moved north. The heaviest rains were confined to far Eastern Mississippi where 3 to 4 inches fell over a 15 hour period. Due to the duration of the rain no flooding was reported.

Across Eastern Mississippi, Hurricane Ivan was responsible for one fatality. This fatality occurred in Brooksville when a tree fell on a man. Damage from Ivan was estimated at \$200 Million. M54OU

## MISSISSIPPI, North

Tishomingo County  
Iuka

12 1545CST  
1550CST 0 0 0.01K Hail (0.75)

Tishomingo County  
Tishomingo

12 1559CST  
1605CST 0 0 10K Thunderstorm Wind (G50)

Several trees and power lines were blown down.

Union County  
New Albany

12 1614CST  
1620CST 0 0 0.01K Hail (0.75)

Union County  
Blue Spgs

12 1640CST  
1645CST 0 0 0.10K Hail (1.00)

Pontotoc County  
9 NE Pontotoc

12 1700CST  
1705CST 0 0 0.50K Hail (1.50)

Lee County  
5 NW Tupelo

12 1714CST  
1720CST 0 0 1K Thunderstorm Wind (G50)

Several large tree limbs were knocked down.

Lee County  
4 NW Tupelo

12 1725CST  
1730CST 0 0 0.75K Hail (1.75)

Lee County  
Shannon

12 1815CST  
1820CST 0 0 5K Thunderstorm Wind (G50)

Some trees were blown down.

Chickasaw County  
Okolona

12 1830CST  
1835CST 0 0 1K Thunderstorm Wind (G55)

A shed was blown over and a lawn tractor was overturned.

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<b><u>MISSISSIPPI, North</u></b>									
<b>Monroe County</b>									
3 S Amory	12	1839CST 1845CST			0	0	5K		Thunderstorm Wind (G50)
		Several trees were knocked down.							
<b>Monroe County</b>									
Hatley	12	1840CST 1845CST			0	0	0.50K		Hail (0.88)
<b>Chickasaw County</b>									
Okolona	12	1850CST 1855CST			0	0	10K		Thunderstorm Wind (G50)
		Several trees were blown down. One tree fell on top of a garage.							
<b>Benton County</b>									
Countywide	13	0800CST 0900CST			0	0	1K		Flash Flood
		A few road were closed across the county.							
<b>MSZ016&gt;017-023&gt;024</b>									
Lee - Itawamba - Chickasaw - Monroe	16	1230CST 1430CST			0	0	30K		Tropical Storm

Hurricane Ivan had weakened to a tropical storm before bringing strong winds to northeast Mississippi. Some trees and power lines were blown down. One person was killed in Lee County when he came in contact with an antenna loaded with wires after the antenna had been knocked down.

## MISSISSIPPI, South

<b>MSZ077-080&gt;082</b>									
Pearl River - Hancock - Harrison - Jackson	15	1500CST			0	0	8M		Hurricane/Typhoon
	16	0600CST							
<b>MSZ080&gt;082</b>									
Hancock - Harrison - Jackson	15	1800CST			0	0	2M		Storm Surge
	16	0600CST							

Hurricane Ivan moved steadily northward across the the north-central Gulf of Mexico on September 15th before turning north-northeast and making landfall near Gulf Shores, Alabama as a Category 3 hurricane during the early morning of September 16th.

Hurricane Ivan made landfall far enough to the east of the Mississippi Coast to minimize the damage to the coastal counties, however hurricane force winds did affect Jackson County. An anemometer on top of the Emergency Operation Center in downtown Pascagoula recorded a wind gust to 76 knots (88 mph) as the eye of the hurricane passed to the east of area. Tropical storm force winds occurred over Harrison and Hancock Counties with wind gusts approaching hurricane force in the coastal waters. A wind gust of 68 knots (78 mph) was recorded by an automated wind gage at Pointe Cadet in Biloxi Harbor, and 53 knot (61 mph) wind gust was recorded at the Emergency Operations Center in Waveland.

Jackson County experienced the greatest amount of damage among coastal counties. A roof was blown off of an apartment building in Pascagoula and at least a dozen homes suffered major damage either from wind or from fallen trees. Around 100 homes had some type of wind damage, along with 30 mobile homes and 25 businesses. Trees and large tree limbs were toppled in many areas contributing to power outages in Jackson County. Wind damage was much less over Harrison, Hancock, and Pearl River counties. There were scattered reports of fallen trees and tree limbs, downing power lines and causing damage to some houses.

The lowest pressure recorded along the Mississippi Coast was 975.6 mb at 2336 CST on September 15th at the Pascagoula Airport. However power to the weather instrument failed shortly after this reading and a lower reading is highly likely. At Keesler Air Force Base in Biloxi, the lowest pressure of 982.9 mb occurred at 0055 CST September 16th.

Storm surge was generally 3 to 5 feet above normal along the coast. The highest storm surge recorded was at the mouth of the Pascagoula River near Pascagoula with a storm surge 6.72 ft NGVD. Some tidal surge flooding occurred in low lying areas near the coast.

No tornadoes were reported. Storm total rainfall varied from an inch or less in Hancock County to around 6 inches in eastern Jackson County. The highest rainfall total was 6.29 inches at the Pascagoula Emergency Operations Center.

No direct injuries or fatalities were noted in coastal Mississippi.

Total storm damage was estimated at around 10 million dollars with approximately 80 percent of the damage due to wind (\$6.7 million) and 20 percent (\$ 2.3 million) due to storm surge damage.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## MISSISSIPPI, South

### MISSISSIPPI, Southeast

**MSZ067-075>076-078>079**      **Wayne - Perry - Greene - Stone - George**

<b>14</b>	<b>1334CST</b>	<b>0</b>	<b>0</b>	<b>200K</b>	<b>Hurricane/Typhoon</b>
<b>16</b>	<b>1500CST</b>				

Please see the detailed narrative on Hurricane Ivan under Alabama, Southwest, September 13-16, 2004. Hurricane force winds, primarily in gusts, occurred over most interior portions of southeast Mississippi during the late evening hours of September 15th ,and the very early morning hours of September 16th. Duration of the winds producing hurricane force gusts was around two hours. These strong winds downed some trees across the region, some of which fell onto structures which were damaged as a result. Although Ivan did produce wind damage across southeast Mississippi, this damage was neither as widespread nor as severe as was the wind damage over much of southwest Alabama and the western Florida panhandle.

## MISSOURI, East

### **Ralls County**

<b>10 SW New London</b>	<b>15</b>	<b>1735CST</b>	<b>0</b>	<b>0</b>	<b>Thunderstorm Wind (G55)</b>
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The County Sheriff reported a tractor trailer overturned on Highway 19 southwest of Perry.

## MISSOURI, Lower

NONE REPORTED.

## MISSOURI, Northeast

NONE REPORTED.

## MISSOURI, Northwest

### **Randolph County**

<b>1 N Moberly</b>	<b>15</b>	<b>1700CST</b>	<b>0</b>	<b>0</b>	<b>20K</b>	<b>Flash Flood</b>
		<b>2200CST</b>				

A thunderstorm produced torrential rains in a short period of time around the city of Moberly. Numerous homes and businesses sustained water damage. There were also several water rescues for stranded motorists.

### **Buchanan County**

<b>1 ENE St Joseph</b>	<b>17</b>	<b>2135CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Buchanan County**

<b>1 ENE St Joseph</b>	<b>17</b>	<b>2145CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Buchanan County**

<b>Easton</b>	<b>17</b>	<b>2305CST</b>	<b>0</b>	<b>0</b>	<b>Hail (2.00)</b>
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### **De Kalb County**

<b>Stewartsville</b>	<b>17</b>	<b>2310CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.75)</b>
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### **Platte County**

<b>Edgerton</b>	<b>17</b>	<b>2312CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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### **Andrew County**

<b>2 S Cosby</b>	<b>17</b>	<b>2335CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.75)</b>
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### **Clay County**

<b>Mosby</b>	<b>17</b>	<b>2335CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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### **Andrew County**

<b>Rochester</b>	<b>17</b>	<b>2340CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.75)</b>
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### **Clinton County**

<b>Plattsburg</b>	<b>17</b>	<b>2340CST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **De Kalb County**

<b>Clarksdale</b>	<b>17</b>	<b>2340CST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.75)</b>
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## Storm Data and Unusual Weather Phenomena

Time Loss/ Length	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b>MISSOURI, Northwest</b>									
<b>Andrew County</b>									
10 E Savannah	18	0030CST 0500CST			0	0			Flash Flood
		High water due to heavy rains was observed on Route F and County Roads 257 and 253. A water rescue was needed for a stranded motorist on County Road 257.							
<b>De Kalb County</b>									
6 S Union Star	18	0030CST 0530CST			0	0			Flash Flood
		Creek was out of its banks and flooding Route V just east of the Andrew-Dekalb county line. Water over Route J in several areas.							
<b>Worth County</b>									
5 NW Grant City	18	0040CST			0	0			Hail (0.88)
<b>Jackson County</b>									
Kansas City	18	0100CST			0	0			Hail (0.88)
<b>Jackson County</b>									
Kansas City	18	0125CST			0	0			Hail (1.75)
<b>Jackson County</b>									
Lees Summit	18	0128CST			0	0			Hail (1.75)
<b>Jackson County</b>									
6 E Grandview	18	0130CST			0	0			Hail (0.88)
<b>Jackson County</b>									
Lees Summit	18	0140CST			0	0			Hail (2.00)
<b>Clinton County</b>									
Perrin	18	0330CST 0500CST			0	0			Flash Flood
		Heavy rains caused flooding on several locations on Highway 33.							
<b>Jackson County</b>									
Kansas City	18	0407CST			0	0			Hail (0.88)
<b>Andrew County</b>									
Savannah	18	0433CST			0	0			Hail (0.75)
<b>Clay County</b>									
Liberty	18	0450CST 0900CST			0	0			Flash Flood
		Flash flooding reported along old Highway 210 between Bluff Road and Raines Road.							
<b>MOZ001&gt;002</b>									
		<b>Atchison - Nodaway</b>							
	18	0500CST			0	0			High Wind (G52)
		A few trees blown down across the county.							
<b>Platte County</b>									
Platte City	18	0730CST 0930CST			0	0			Flash Flood
		Several streets in town were water covered due to brief heavy rains.							
<b>MOZ029-037</b>									
		<b>Clay - Jackson</b>							
	18	0100CST 1800CST			0	0			Flood
		The Fishing River near Mosby crested at 25.40 feet, or 7.40 feet above flood stage.							
<b>MOZ044</b>									
		<b>Johnson</b>							
	18	1600CST			0	0			Flood
	19	0600CST							
		The Blackwater River near Valley City crested at 25.65 feet, or 3.65 feet above flood stage.							
<b>MOZ054</b>									
		<b>Henry</b>							
	18	1800CST			0	0			Flood
	20	0100CST							
		The Big Creek near Blairstown crested at 24.70 feet, or 4.70 feet above flood stage.							

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## MISSOURI, Southeast

**MOZ076-086>087-100-107>112-114 Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid**

22	0000CST	0	0	Drought
30	2359CST			

This was the driest September on record for southeast Missouri. At Cape Girardeau, the monthly rainfall was only a trace. At Poplar Bluff, only 0.01 inch was recorded. Lawns and fields turned brown. By the end of the month, moderate drought conditions were assessed over southeast Missouri. The dry weather set in too late to harm crops. In fact, the timing of the dry weather helped farmers harvest one of their best crops on record.

## MISSOURI, Southwest

<b>Webster County</b>									
<b>5 E Marshfield</b>	14	1400CST			0	0	0.50K		Thunderstorm Wind (G50)

Severe thunderstorm wind gusts downed a few trees and a picket fence at a rural residence.

<b>Ozark County</b>									
<b>Isabella</b>	24	1720CST			0	0			Heavy Rain

The Isabella lark site measured 0.66 inches of rain in 30 minutes.

<b>Douglas County</b>									
<b>4 SE Vanzant</b>	24	1747CST			0	0			Heavy Rain

A co-op observer measured 1.50 inches of rain in 15 minutes.

<b>Ozark County</b>									
<b>Isabella</b>	24	1750CST			0	0			Heavy Rain

The Isabella lark site measured 0.96 inches of rain in 30 minutes.

## MONTANA, Central

<b>Toole County</b>									
<b>Sunburst</b>	01	1510MST			0	0			Thunderstorm Wind (G52)

<b>Toole County</b>									
<b>Sunburst</b>	01	1515MST			0	0			Hail (1.00)

A severe thunderstorm produced hail 1 inch in diameter and a wind gust to 60 mph. The hail covered the ground. The temperature dropped from 87 degrees to 52 degrees in a few minutes when the storm hit.

<b>Glacier County</b>									
<b>2 E East Glacier Park</b>	01	1600MST			0	0			Thunderstorm Wind (G55)

A severe thunderstorm produced a wind gust to 63 mph at East Glacier Park 2E.

<b>Liberty County</b>									
<b>33 N Chester</b>	01	1635MST			0	0			Hail (0.75)

<b>Liberty County</b>									
<b>33 N Chester</b>	01	1635MST			0	0	1K		Thunderstorm Wind (G52)

A severe thunderstorm dropped .75 inch diameter hail and produced a wind gust to 60 mph at Chester 33N. The strong winds damaged several power poles, shearing them off 10 feet above the ground.

<b>Liberty County</b>									
<b>22 E Whitlash</b>	01	1635MST			0	0			Thunderstorm Wind (G50)

A severe thunderstorm produced a wind gust to 58 mph at Whitlash 22E.

<b>Liberty County</b>									
<b>25 NNE Chester</b>	01	1640MST			0	0	3K		Hail (0.75)

<b>Liberty County</b>									
<b>25 NNE Chester</b>	01	1640MST			0	0			Thunderstorm Wind (G52)

A severe thunderstorm dropped .75 inch diameter hail and produced a wind gust to 60 mph at Chester 25NNE. The hail flattened 200 acres of wheat and 200 acres of barley.

<b>Hill County</b>									
<b>16 W Simpson</b>	01	1645MST			0	0	1K		Hail (0.75)

A severe thunderstorm dropped .75 inch diameter hail at Simpson 16W. The hail covered the ground. In addition to the hail, the storm produced wind gusts in excess of 40 mph which blew a door off a storage shed.



## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed    Injured		Estimated Damage Property    Crops		Character of Storm
<b><u>MONTANA, Central</u></b>									
<b>Hill County</b>									
<b>Havre</b>	<b>01</b>	<b>1645MST</b>			<b>0</b>	<b>1</b>	<b>10K</b>		<b>Thunderstorm Wind (G56)</b>
A severe thunderstorm produced a wind gust to 65 mph at Havre. A roofer sustained minor injuries when he was blown off the building he was working on. The thunderstorm overturned an unoccupied trailer, knocked down numerous power and phone lines and broke the windshields of a dozen vehicles at two car dealerships.									
<b>Hill County</b>									
<b>5 N Simpson</b>	<b>01</b>	<b>1700MST</b>			<b>0</b>	<b>0</b>			<b>Hail (1.50)</b>
A severe thunderstorm produced 1.5 inch diameter hail at Simpson 5N.									
<b>Liberty County</b>									
<b>Chester</b>	<b>01</b>	<b>1745MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Chester.									
<b>Teton County</b>									
<b>10 W Fairfield</b>	<b>01</b>	<b>1940MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>
A severe thunderstorm produced a wind gust to 60 mph at Fairfield 10W. The storm knocked down many tree limbs.									
<b>Teton County</b>									
<b>7 W Fairfield</b>	<b>01</b>	<b>1945MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Fairfield 7W.									
<b>Teton County</b>									
<b>Fairfield</b>	<b>01</b>	<b>1950MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Fairfield. The storm downed several power lines and many trees.									
<b>Teton County</b>									
<b>Choteau</b>	<b>01</b>	<b>1950MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G77)</b>
A severe thunderstorm produced a wind gust to 89 mph at Choteau.									
<b>Teton County</b>									
<b>5 NE Choteau</b>	<b>01</b>	<b>2000MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G70)</b>
A severe thunderstorm produced a wind gust to 80 mph at Choteau 5NE.									
<b>MTZ013</b>									
	<b>01</b>	<b>2000MST</b>			<b>0</b>	<b>0</b>			<b>Wildfire</b>
Thunderstorms caused 5 wildfires during the evning hours of the 1st. The fires (the largest of which was 500 acres) were started by lightning strikes and by downed power lines. Little damage resulted and the fires were quickly contained and extinguished.									
<b>Teton County</b>									
<b>Collins</b>	<b>01</b>	<b>2005MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G61)</b>
A severe thunderstorm produced a wind gust to 70 mph at Collins.									
<b>Teton County</b>									
<b>1 S Dutton</b>	<b>01</b>	<b>2010MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Dutton 1S.									
<b>Pondera County</b>									
<b>2 NW Brady</b>	<b>01</b>	<b>2015MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Brady 2NW.									
<b>Pondera County</b>									
<b>4 E Conrad</b>	<b>01</b>	<b>2025MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>
A severe thunderstorm produced a wind gust to 60 mph at Conrad 4E. The storm snapped 20 feet off the top of a 60 foot tree.									
<b>Liberty County</b>									
<b>25 S Chester</b>	<b>01</b>	<b>2050MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Chester 25S.									
<b>Toole County</b>									
<b>11 S Devon</b>	<b>01</b>	<b>2055MST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G50)</b>
A severe thunderstorm produced a wind gust to 58 mph at Devon 11S.									

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
Killed	Injured	Property	Crops						
<b><u>MONTANA, East</u></b>									
Phillips County Chapman	01	1710MST			0	0			Hail (0.75)
<b><u>MONTANA, South</u></b>									
NONE REPORTED.									
<b><u>MONTANA, West</u></b>									
Flathead County West Glacier	01	1315MST			0	0			Hail (0.88)
Missoula County Missoula	01	1535MST			0	0			Thunderstorm Wind (G60)
Missoula County 3 S Lolo	01	1628MST			0	0			Thunderstorm Wind (G71)
Missoula County 14 N Seeley Lake	01	1635MST			0	0			Thunderstorm Wind (G60)
A late season thunderstorm event struck across portions of Western Montana. Winds were the main threat with these storms with trees being reported blow down onto power lines causing a fire north of Seeley Lake.									
MTZ002	<b>West Glacier Region</b>				0	2			Landslide
A Canadian couple were injured and hospitalized when their 2003 Porsche Carrera GT was struk by falling rocks the size of basketballs on Glacier National Park's Going to the Sun road. The rock slide was caused by excessive rains over the area.									
<b><u>NEBRASKA, Central</u></b>									
Garden County Lisco to 1 SE Lisco	14	1615MST 1620MST			0	0	2K		Hail (1.75)
Garden County 15 NNW Oshkosh	14	1630MST			0	0	1K		Hail (0.88)
Garden County 10 NE Oshkosh	14	1714MST			0	0	2K		Hail (1.75)
Deuel County 8 NW Chappell	14	1715MST			0	0	2K		Hail (1.75)
Deuel County Chappell	14	1723MST 1730MST			0	0	6K		Hail (1.00)
Mcperson County 13 W Tryon	14	1948CST			0	0			Hail (0.75)
Mcperson County 10 W Tryon	14	1955CST			0	0			Hail (0.75)
Thomas County 3 W Thedford	14	2015CST			0	0	1K		Hail (1.00)
Lincoln County 9 N North Platte	14	2040CST			0	0			Hail (0.75)
<b><u>NEBRASKA, East</u></b>									
Cedar County Hartington	13	1641CST			0	0			Hail (0.75)
Boone County 1 N Petersburg	13	1700CST			0	0			Hail (1.25)

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
NEBRASKA, East									
<b>Antelope County</b> 2 SW Oakdale	13	1700CST			0	0			Thunderstorm Wind (G55)
									Thunderstorm wind gusts estimated at over 60 mph by a cooperative observer blew down a few trees southwest of Oakdale, one of which had a trunk 12 inches in diameter.
<b>Antelope County</b> 6 SE Elgin	13	1715CST			0	0			Hail (0.75)
<b>Antelope County</b> 9 ESE Elgin	13	1730CST			0	0			Hail (0.88)
<b>Pierce County</b> 2 N Foster	13	1740CST			0	0			Hail (0.75)
<b>Madison County</b> 4 SSE Tilden	13	1845CST			0	0			Hail (0.75)
<b>Madison County</b> 2 SW Meadow Grove	13	1930CST			0	0			Hail (1.25)
<b>Burt County</b> 3 N Oakland	14	1549CST			0	0			Hail (0.88)
<b>Saline County</b> Wilber	15	0227CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm wind gusts estimated at 60 mph downed numerous tree limbs in town.
<b>Saline County</b> De Witt	15	0227CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm wind gusts estimated at 60 mph caused shed damage and minor house damage in town.
<b>Jefferson County</b> Fairbury	15	0235CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm wind gusts were estimated at around 60 mph by the emergency manager in Fairbury.
<b>Lancaster County</b> Lincoln	15	0245CST			0	0			Thunderstorm Wind (G55)
									Thunderstorm wind gusts estimated at over 60 mph uprooted several trees and caused serious damage to many others. At least 20 to 30 mature trees in town came down or had to be removed due to serious damage. Fallen tree branches also downed power lines in Lincoln.
<b>Lancaster County</b> .5 S Waverly	15	0300CST			0	0			Thunderstorm Wind (G60)
									Thunderstorm wind gusts estimated at 70 mph destroyed a shed and two turkey barns and killed almost 2000 turkeys just south of Waverly.
<b>Douglas County</b> Millard	15	0310CST			0	0			Thunderstorm Wind (G50)
									Thunderstorm wind gusts estimated at 60 mph blew down some fences in the Millard area around 128th and Harrison Streets.
<b>Cass County</b> 4 W South Bend	15	0315CST			0	0			Thunderstorm Wind (G55)
									Thunderstorm wind gusts estimated at over 60 mph blew 4 air-conditioning units off of a local restaurant. The winds also caused some crop damage around town.

## NEBRASKA, Extreme Northeast

NONE REPORTED.

## NEBRASKA, Extreme Southwest

<b>Dundy County</b>					
<b>Haigler</b>	<b>14</b>	<b>1751MST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
Broken winds on house and vehicle.					

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEBRASKA, Extreme Southwest

<b>Dundy County</b>									
Benkelman	14	1806MST			0	0			Thunderstorm Wind (G50)
<b>Dundy County</b>									
Benkelman	14	1817MST			0	0			Hail (1.75)
<b>Dundy County</b>									
4 NW Benkelman	14	1820MST			0	0			Hail (1.00)
<b>Dundy County</b>									
4 NW Benkelman	14	1820MST			0	0			Thunderstorm Wind (G61)
									Picnic table blown around with glass top broken.
<b>Dundy County</b>									
Benkelman	14	1825MST			0	0			Hail (2.50)
<b>Hitchcock County</b>									
Stratton	14	1840MST			0	0			Hail (0.75)
<b>Hitchcock County</b>									
12 SSW Trenton	14	1849MST			0	0			Hail (1.00)
<b>Red Willow County</b>									
4 SW Mc Cook	14	1925MST			0	0			Hail (0.88)
<b>Red Willow County</b>									
7 SSE Mc Cook	14	1926MST			0	0			Hail (1.75)

## NEBRASKA, South Central

<b>Furnas County</b>									
Wilsonville	14	2055CST			0	0	30K	100K	Hail (1.75)
<b>Furnas County</b>									
2 W Cambridge	14	2100CST			0	0	30K	100K	Hail (1.75)

## NEBRASKA, West

<b>Banner County</b>									
18 ENE Harrisburg	14	1323MST 1327MST			0	0			Hail (0.75)
<b>Banner County</b>									
16 WNW Harrisburg	14	1345MST 1350MST			0	0			Hail (0.75)
<b>Morrill County</b>									
Bridgeport to 5 SE Bridgeport	14	1400MST 1415MST			0	0			Hail (1.00)
<b>Banner County</b>									
12 ESE Harrisburg	14	1445MST 1450MST			0	0			Hail (1.75)
<b>Banner County</b>									
6 W Harrisburg	14	1511MST 1514MST			0	0			Hail (1.00)
<b>Banner County</b>									
4 W Harrisburg	14	1520MST 1524MST			0	0			Hail (1.75)
<b>Morrill County</b>									
11 SE Redington	14	1527MST 1531MST			0	0			Hail (1.00)

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
<b><u>NEBRASKA, West</u></b>									
<b>Morrill County</b>									
12 SE Bridgeport	14	1538MST 1543MST			0	0			Hail (1.75)
<b>Morrill County</b>									
4 S Broadwater	14	1604MST 1608MST			0	0			Hail (1.00)
		1/2 to 1 inch diameter hail reported.							
<b>Cheyenne County</b>									
5 NE Potter	14	1619MST 1622MST			0	0			Hail (0.75)
<b>Cheyenne County</b>									
Sunol	14	1702MST			0	0			Hail (1.25)
		Mostly 1/2 to 1 inch diameter hail.							
<b><u>NEVADA, North</u></b>									
<b>NVZ035</b>									
		White Pine							
	18	1438PST			0	0			High Wind (G52)
<b>NVZ034</b>									
		Ruby Mountains/E Humboldt Range							
	19	1100PST 1500PST			0	0			Heavy Snow
		Several Snotel sites above 7500 feet reported 4 to 7 inches of snow.							
<b><u>NEVADA, South</u></b>									
<b>Clark County</b>									
5 SW Las Vegas Mc Cai	09	1327PST			0	0			Thunderstorm Wind (G58)
		The weather observing equipment at the NWS Las Vegas recorded a wind gust of 58 mph with a thunderstorm.							
<b>Clark County</b>									
Henderson	09	1346PST			0	0			Hail (0.75)
		An off duty NWS meteorologist recorded 3 quarter inch hail in Henderson.							
<b><u>NEVADA, West</u></b>									
		NONE REPORTED.							
<b><u>NEW HAMPSHIRE, North and Central</u></b>									
		NONE REPORTED.							
<b><u>NEW HAMPSHIRE, Southern</u></b>									
<b>Cheshire County</b>									
Keene	18	1230EST 1400EST			0	0	10K		Flash Flood
		Branch Brook, Roxbury Heavy rainfall associated with the remnants of Ivan caused flash flooding in Cheshire County. Storm totals of 3 to 5 inches brought a tributary of the Branch Brook out of its banks and flooded a nearby roadway. No injuries were reported.							
<b><u>NEW JERSEY, Northeast</u></b>									
<b>Hudson County</b>									
Countywide	08	0715EST 0800EST			0	0			Flash Flood
		Torrential rains resulted in flash flooding. Cars were trapped and people were rescued in Hoboken. Basements flooded with up to four feet of water across the county. A roadway overpass collapsed in Weehawken. In Harrison, 5 feet of water accumulated at Path train station. Rescues were performed by police there.							
<b>Bergen County</b>									
Countywide	08	0825EST 0900EST			0	0			Flash Flood
		Torrential rains caused countywide flash flooding. Several roads were closed, including parts of Routes 17 and 46. In Bogota, a SUV began floating when the vehicle was immersed in several feet of water. This resulted in rescues by local police.							
<b>Essex County</b>									
Newark	08	0830EST 0900EST			0	0			Flash Flood
		Flash flooding resulted in several feet of water on roadways. Route 22 in Newark was closed due to two feet of water on the roadway near Weequahic Park.							

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **NEW JERSEY, Northeast**

### **Union County**

#### **Rahway**

08	0850EST 0910EST				0	0			Flash Flood
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Flash flooding caused county road 602 to become submerged in several feet of water.

### **Passaic County**

#### **Passaic**

08	0910EST 0930EST				0	0			Flash Flood
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Flash flooding caused a mile and a half stretch of route 21 to be closed due to at least a foot of running water.

The remnants of Hurricane Frances produced torrential rainfall across Northeast New Jersey on September 8th. Rainfall amounts ranging from an inch to up to 6 inches were common across the area. This caused extensive flash flooding across the region, resulting in rescues of people from homes and cars.

### **Hudson County**

#### **Harrison**

18	0755EST 0815EST				0	0			Flash Flood
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Torrential rains caused flash flooding on Route 280. Cars stalled in several feet of water.

### **Bergen County**

#### **Bergenfield**

18	0800EST 0830EST				0	0			Flash Flood
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Torrential rains caused flash flooding of numerous roads in Bergen field. The worst flooding occurred at Woodbine and Lake Streets.

### **Bergen County**

#### **Rutherford**

18	0845EST 0910EST				0	0			Flash Flood
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Torrential rains caused flash flooding in Rutherford. Homes were flooded and cars were stranded in several feet of water.

Torrential rains from the remnants of Hurricane Ivan caused flash flooding in Northeast New Jersey. Storm total rainfall amounts ranged from 2 to locally 5 inches. In addition to the heavy rains, gusty winds up to 45 mph in embedded thunderstorms knocked down a tree along with power lines in Ramsey at 8:38 am.

### **Bergen County**

#### **Bergenfield**

28	1540EST 1630EST				0	0			Flash Flood
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Torrential rains caused flash flooding of streets.

### **Essex County**

#### **Nutley**

28	1615EST 1630EST				0	0			Flash Flood
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Torrential rains caused flash flooding on the Garden State Parkway.

### **Passaic County**

#### **Central Portion**

28	1615EST 1640EST				0	0			Flash Flood
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Roads closed due to extensive flash flooding.

### **Union County**

#### **East Portion**

28	1630EST 1700EST				0	0			Flash Flood
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Torrential rains caused flash flooding on I-82. Portion of the highway was closed.

### **Hudson County**

#### **Harrison**

28	1740EST 1750EST				0	0			Flash Flood
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Numerous road closures in Harrison due to torrential rains.

### **Hudson County**

#### **Harrison**

28	1815EST 1900EST				0	0			Flash Flood
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Widespread flash flooding of roadways. Car seen floating down I-280.

### **Passaic County**

#### **Wayne**

28	1815EST 1845EST				0	0			Flash Flood
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Highway 202 closed due to flash flooding.

### **Union County**

#### **Cranford**

28	1830EST 1845EST				0	0			Flash Flood
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Widespread flash flooding resulted in numerous road closures and evacuation of houses and vehicles.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>NEW JERSEY, Northeast</u></b>									
<b>Essex County</b>									
Countywide	28	1840EST 1900EST			0	0			Flash Flood
		Countywide flash flooding of streets and highways occurring in Essex County. Road closures resulted, with the Garden State Parkway having several lanes closed.							
<b>Bergen County</b>									
Bergenfield	28	1900EST 1930EST			0	0			Flash Flood
		Torrential rains flooded creeks which in tuen flooded roads.							
<b>Bergen County</b>									
Bergenfield	28	2000EST 2100EST			0	0			Flash Flood
		Creeks out of banks due to torrential rainfall. Numerous roads closed.							
<b>Essex County</b>									
Nutley	28	2045EST 2115EST			0	0			Flash Flood
		Garden State Parkway closed due to flash flooding.							
<b>Hudson County</b>									
Harrison	28	2045EST 2120EST			0	0			Flash Flood
		Major flash flooding due to torrential rains. Most roads in town closed.							
<b>Union County</b>									
Linden	28	2100EST 2200EST			0	0			Flash Flood
		Major flash flooding of the New Jersey Turnpike at Routes 1 and 9.							
<b>Passaic County</b>									
Central Portion	28	2130EST 2150EST			0	0			Flash Flood
		Torrential rains caused flash flooding near Wayne.							
		The remnants of Hurricane Jeane produced between 3 and 6 inches of rain across Northeast New Jersey. This resulted in widespread flash flooding across the region.							
<b><u>NEW JERSEY, South and Northwest</u></b>									
<b>Atlantic County</b>									
Brigantine to Longport	03 07	0700EST 0700EST			0	0	0	0	Rip Current
<b>Cape May County</b>									
Ocean City to Cape May	03 07	0700EST 0700EST			0	0	0	0	Rip Current
<b>Monmouth County</b>									
Highland Beach to Manasquan	03 07	0700EST 0700EST			0	0	0	0	Rip Current
<b>Ocean County</b>									
Pt Pleasant to Beach Haven Hgts	03 07	0700EST 0700EST			0	0	0	0	Rip Current
		The combination of swells from Hurricane Frances and a high pressure system that built into New England and the Canadian Maritimes caused rip currents to occur throughout the Labor Day weekend. Bathing restrictions were in place throughout the weekend and water rescues were performed. No deaths were reported.							
<b>Warren County</b>									
Countywide	18	0535EST 0635EST			0	0			Thunderstorm Wind (G50)
		A couple of lines of severe thunderstorms knocked down numerous trees, tree limbs and wires in Warren County.							
<b>Hunterdon County</b>									
Countywide	18	0550EST 0655EST			0	0			Thunderstorm Wind (G50)
		A couple of lines of severe thunderstorms knocked down numerous trees, tree limbs and wires in Hunterdon County.							

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW JERSEY, South and Northwest

### **Warren County** **Countywide**

**18 0600EST**  
**1500EST** **0 0** **Flash Flood**

### **NJZ007**

**Warren**  
**18 1431EST**  
**20 1026EST** **0 0 28M** **Flood**

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall during the first half of the day on the 18th in Warren County. Storm totals average 3 to 6 inches with locally higher amounts throughout the county. The torrential rain caused widespread poor drainage, creek and river flooding. Runoff from the heavy rain also caused the worst flooding along the Delaware River since 1955. President George W. Bush declared the county a disaster area. Damage was estimated at twenty-eight million dollars.

The Delaware River washed a home from Harmony Township (Warren County) downstream. The home crashed into the Easton-Phillipsburg Free Bridge. The impact sheared the roof from the home and the remainder floated under the bridge. In White Township officials condemned more than two dozen cottages as Delaware River flood waters broke windows and filled the homes with mud.

The Delaware River at Tocks Island was above its 21 foot flood stage from 438 p.m. EDT on the 18th through 232 a.m. EDT on the 20th. It crested at 30.32 feet at 845 a.m. EDT. In Belvidere, the Delaware River was above its 22 foot flood stage from 1101 p.m. EDT on the 18th through 842 p.m. EDT on the 19th. It crested at 24.83 feet at 915 a.m. EDT on the 19th. Farther downstream, the Delaware River at the Easton-Phillipsburg Bridge was above its 22 foot flood stage from 331 p.m. EDT on the 18th through 1126 a.m. EDT on the 20th. It crested at 33.45 feet at 8 a.m. EDT on the 19th. Even farther downstream at Riegelsville, the Delaware River was above its 22 foot flood stage from 522 p.m. EDT on the 18th through 1025 a.m. EDT on the 20th. It crested at 30.95 feet at 1115 a.m. EDT on the 19th.

Storm totals included 8.90 inches in Great Meadows, 6.32 inches in Belvidere, 5.27 inches in Blairstown, 4.70 inches in Phillipsburg and 3.93 inches in Stewartsville.

### **Morris County** **Budd Lake**

**18 0655EST** **0 0** **Thunderstorm Wind (G50)**

A severe thunderstorm knocked down several trees in Mount Olive Township and adjacent locations in western Morris County.

### **Morris County** **West Portion**

**18 0700EST**  
**1000EST** **0 0** **Flash Flood**

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall during the morning of the 18th across the western part of Morris County. Storm totals reached around 4 inches along the borders with Sussex and Warren Counties. Widespread poor drainage and some creek flooding occurred. A mudslide in Washington Township blocked a roadway. Storm totals included 4.20 inches in Milton and 4.00 inches in Chester.

### **Sussex County** **Countywide**

**18 0700EST**  
**19 0436EST** **0 0 400K** **Flash Flood**

### **NJZ001**

**Sussex**  
**19 0400EST**  
**20 0100EST** **0 0 500K** **Flood**

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall from the late evening of the 17th through the first half of the day on the 18th in Sussex County. Doppler Radar storm total estimates averaged between 2 and 5 inches throughout the county. The torrential rain caused widespread poor drainage, creek and river flooding. It was the worst flooding along the Delaware River since 1955. Extensive damage also occurred within the Delaware Water Gap National Recreational Area. President George W. Bush declared the county a disaster area.

The Delaware River at Port Jervis New York and Matamoras Pennsylvania crested at 19.52 feet at 545 p.m. EDT on the 18th. Flood stage is 18.0 feet. The Delaware River at Montague crested at 28.39 feet at 1115 p.m. EDT on the 18th. Flood stage is 25 feet. Farther downstream and down county, the Delaware River at Tocks Island was above its 21 foot flood stage from 438 p.m. EDT on the 18th through 232 a.m. EDT on the 20th. It crested at 30.32 feet at 845 a.m. EDT. The Flat Brook at Flatbrookville was above its 6 foot flood stage from 136 p.m. EDT on the 18th through 536 a.m. EDT on the 19th. It crested at 8.19 feet at 730 p.m. EDT on the 18th.

Actual storm totals included 5.20 inches in Wantage and 4.55 inches in Beamersville.

### **NJZ009**

**Hunterdon**  
**18 1622EST**  
**20 0925EST** **0 0 900K** **Flood**



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					Killed	Injured	Property	Crops	

## NEW JERSEY, South and Northwest

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy in the upper and middle sections of the Delaware River Valley. While the rain was not as heavy in Hunterdon County, the runoff from the heavy rain upstream produced the worst flooding along the Delaware River since 1955. Townships and roadways along the Delaware River were hardest hit. Damage was estimated at close to one million dollars.

The Delaware River at Riegelsville was above its 22 foot flood stage from 522 p.m. EDT on the 18th through 1025 a.m. EDT on the 20th. It crested at 30.95 feet at 1115 a.m. EDT on the 29th. The Delaware River at Frenchtown was above its 16 foot flood stage from about 6 p.m. EDT on the 18th through 927 a.m. EDT on 20th. It crested at 20.7 feet at 1 p.m. EDT on the 19th. Farther downstream, the Delaware River at Stockton was above its 18 foot flood stage from Midnight EDT on the 19th through 836 a.m. EDT on the 20th. It crested at 22.5 feet at 3 p.m. EDT on the 19th.

**NJZ015**

### **Mercer**

<b>19</b>	<b>0048EST</b>	<b>0</b>	<b>0</b>	<b>2.4M</b>	<b>Flood</b>
<b>20</b>	<b>1145EST</b>				

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy in the upper and middle sections of the Delaware River Valley. While the rain was not heavy in Mercer County, the runoff from the heavy rain upstream produced the worst flooding along the Delaware River since 1955. Townships and roadways along the Delaware River were hardest hit. Damage was estimated in the millions.

The Delaware River at Washington's Crossing was above its 20 foot flood stage from 416 p.m. EDT through 828 p.m. EDT on the 19th. It crested at 20.12 feet at 5 p.m. EDT. Farther downstream, the Delaware River at Trenton was above its 20 foot flood stage from 148 a.m. EDT on the 19th through 1245 p.m. EDT on the 20th. It crested at 23.39 feet at 731 p.m. EDT on the 19th. Flood stage is also 20 feet.

**NJZ017-017>018-018>019-019**

### **Gloucester - Camden - Northwestern Burlington**

<b>19</b>	<b>1400EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Astronomical High Tide</b>
<b>20</b>	<b>2000EST</b>				

The combination of runoff from the heavy rain that fell upstream in the Delaware River and the incoming high tide produced minor tidal flooding along the Delaware River and tidal parts of its tributaries during the late afternoon and early evening high tide on both the 19th and 20th. The highest tides occurred on the 19th. The Delaware River in Burlington reached a height of 10.58 feet above mean lower low water at 6 p.m. EDT on the 19th. Minor tidal flooding begins at 9.0 feet above mean lower low water. The Delaware River at Pier 12 in Philadelphia reached a height of 8.96 feet above mean lower low water at 518 p.m. EDT on the 19th. Minor tidal flooding begins at 8.2 feet above mean lower low water.

**Burlington County  
Countywide**

<b>28</b>	<b>1400EST</b> <b>2300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
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**Gloucester County  
Countywide**

<b>28</b>	<b>1400EST</b> <b>2300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
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**Salem County  
Countywide**

<b>28</b>	<b>1400EST</b> <b>2300EST</b>	<b>0</b>	<b>0</b>	<b>Heavy Rain</b>
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The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused bands of heavy downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 2 and 4 inches with the highest amounts toward Philadelphia. Widespread poor drainage flooding occurred. But, the heavy rain fell sporadically and this permitted most major streams and creeks to remain within their banks.

Storm totals included 4.30 inches in Mount Laurel (Burlington County), 3.68 inches in Mount Holly (Burlington County), 3.46 inches in West Deptford (Gloucester County), 3.20 inches in Tabernacle (Burlington County) and 3.14 inches in Wrightstown (Burlington County).

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

**Camden County  
Cherry Hill**

<b>28</b>	<b>1430EST</b> <b>1435EST</b>	<b>2.5</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>Tornado (F0)</b>
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A confirmed F0 (Fujita Scale) tornado touched down in Cherry Hill with maximum winds estimated at 70 mph winds. The path length was 2.5 miles long, with a maximum path width of 50 feet. The northern part of the path was intermittent. Damage included the downing of some trees and power poles, vehicles damaged by flying debris and roof damage to at least two stores. The worst

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					Killed	Injured	Property	Crops	

## **NEW JERSEY, South and Northwest**

damage was concentrated in the shopping center containing the Super G supermarket on Brace Road.

### **Hunterdon County**

#### **Countywide**

<b>28</b>	<b>1650EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0200EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused bands of torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 2 and 5 inches with the highest amounts toward Mercer County. Widespread poor drainage and scattered creek flooding occurred. Roads were flooded and closed and water rescues were performed. The South Branch of the Raritan River at Stanton was above its 8 foot flood stage from 1209 a.m. EDT through 300 a.m. EDT on the 29th. It crested at 8.1 feet at 130 a.m. EDT on the 29th. Storm totals included 4.81 inches in Ringoes, 4.65 inches in Stockton, 4.41 inches in Califon, 4.13 inches in Wertsville, 3.94 inches in Flemington, 3.60 inches in Califon, 3.43 inches in Annandale and 3.26 inches in Alexandria Township.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Mercer County**

#### **Countywide**

<b>28</b>	<b>1700EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>1422EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 2.5 and 6 inches across the county. Widespread poor drainage and creek flooding occurred in low lying areas. Many roads were flooded and closed and numerous water rescues were performed. the combination fo heavy rain and gusty evening winds knocked one tree down into a home in Ewing Township.

The Assunpink Creek at Trenton was above its 7 foot flood stage from 718 p.m. EDT on the 28th through 322 p.m. EDT on the 29th. It crested at 11.08 feet at 315 a.m. EDT on the 29th. Storm totals included 6.20 inches in Washington's Crossing, 5.99 inches in Trenton, 5.30 inches in Windsor, 4.68 inches in Hightstown and 4.08 inches in Lawrenceville.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Middlesex County**

#### **Countywide**

<b>28</b>	<b>1700EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0000EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and throughout the evening of the 28th. Doppler Radar storm total estimates averaged between 3 and 6 inches. Widespread urbanized and poor drainage flooding occurred along with some creek flooding. Many roads were flooded and several were closed. Water rescues were performed.

Storm totals included 5.38 inches in New Brunswick, 4.90 inches in Woodbridge, 4.80 inches in Metuchen and 3.47 inches in Middlesex.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Somerset County**

#### **Countywide**

<b>28</b>	<b>1800EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0600EST</b>			

### **NJZ010**

#### **Somerset**

<b>29</b>	<b>0600EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
<b>30</b>	<b>1015EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and throughout the evening of the 28th. Doppler Radar storm total estimates averaged between 3 and 5 inches. Widespread poor drainage and creek flooding occurred. Flooding also affected the main stem of the Raritan and Millstone Rivers. Many roads were flooded and closed and water rescues were performed.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW JERSEY, South and Northwest

The North Branch of the Raritan River at North Branch was above its 12.3 flood stage from 105 a.m. through 744 a.m. EDT on the 29th. It crested at 13.2 feet at 4 a.m. EDT. Farther downstream, the North Branch of the Raritan River at Raritan was above its 10 foot flood stage from 3 a.m. EDT through 820 a.m. EDT on the 29th. It crested at 10.49 feet at 515 a.m. EDT. Even farther downstream, the North Branch of the Raritan River at South Branch was above its 6.9 foot flood stage from 934 p.m. EDT on the 28th through 307 p.m. EDT on the 29th. It crested at 10.4 feet at 11 a.m. EDT on the 29th.

The Millstone River at Weston was above its 12.4 foot flood stage from 359 p.m. EDT through 555 p.m. EDT on the 29th. It crested at 15.8 feet at 5 p.m. EDT. Farther downstream, the Millstone River at Blackwells Mills was above its 9 foot flood stage from 123 p.m. EDT on the 29th through 1115 a.m. EDT on the 30th. It crested at 10.26 feet at 833 p.m. EDT on the 29th. The main stem of the Raritan River at Manville was above its 14 foot flood stage from 726 a.m. through 607 p.m. EDT on the 29th. It crested at 15.96 feet at 1215 p.m. EDT. Farther downstream, the main stem of the Raritan River at Bound Brook was above its 28 foot flood stage from 1238 p.m. EDT through 737 p.m. EDT on the 29th. It crested at 28.79 feet at 314 p.m. EDT.

Storm totals included 4.24 inches in Neshanic, 4.00 inches in Middlebush, 3.97 inches in Blackwells Mills, 3.88 inches in Somerville, 3.74 inches in Pottersville, 3.48 inches in Readington, 3.35 inches in Far Hills, 3.30 inches in North Plainfield, 3.10 inches in Bound Brook and 2.60 inches in Belle Mead.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Monmouth County**

#### **Howell**

<b>28</b>	<b>1840EST</b>	<b>0</b>	<b>0</b>	<b>Thunderstorm Wind (G52)</b>
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A severe thunderstorm knocked down a couple of trees and wires within Howell Township.

### **Monmouth County**

#### **Countywide**

<b>28</b>	<b>1900EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0200EST</b>			

### **NJZ013**

#### **Western Monmouth**

<b>29</b>	<b>0907EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
	<b>1415EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the evening and overnight on the 28th. Doppler Radar storm total estimates averaged between 3 and 6 inches. Widespread urban and poor drainage and creek flooding occurred. Many roads were flooded and closed and numerous water rescues were performed. Roads were closed and barricaded in Hazlet, Little Silver and Upper Freehold. The next day runoff from the heavy rain caused flooding along the Manasquan River. The Manasquan River at Squankum was above its 7.5 foot flood stage from 1007 a.m. EDT through 315 p.m. EDT on the 29th. It crested at 7.77 feet at 1245 p.m. EDT.

Storm totals included 5.85 inches in Freehold, 4.88 inches in Marlborough, 4.75 inches in Sandy Hook, 4.53 inches in Manalapan, 3.93 inches in Cream Ridge and 3.17 inches in Keansburg.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Morris County**

#### **Southwest Portion**

<b>28</b>	<b>2000EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0000EST</b>			

### **NJZ008**

#### **Morris**

<b>29</b>	<b>0307EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
<b>30</b>	<b>0852EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused heavy downpours to occur during the late afternoon and throughout the evening of the 28th. Doppler Radar storm total estimates averaged between 2 and 5 inches with the highest amounts toward central New Jersey. Widespread poor drainage occurred with some creek flooding in the southwest part of the county. Several roads were closed. Runoff from the heavy rain led to flooding along sections of the Rockaway River. The Rockaway River below the Boonton Reservoir was above its 5 foot flood stage from 407 a.m. EDT on the 29th through 952 a.m. EDT on the 30th. It crested at 5.87 feet at 415 p.m. EDT on the 29th. Storm totals included 4.30 inches in Chester, 4.00 inches in Boonton, 3.84 inches in Ironia, 3.60 inches in Pequannock, 3.50 inches in Butler, 3.47 inches in Chatham, 3.27 inches in Lincoln Park and 3.08 inches in Morris Plains.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW JERSEY, South and Northwest

Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **NJZ016>019**

#### **Salem - Gloucester - Camden - Northwestern Burlington**

<b>28</b>	<b>2200EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Astronomical High Tide</b>
<b>30</b>	<b>1700EST</b>				

The combination of the runoff from the heavy rain from the remnants of Hurricane Jeanne and the spring tides associated with the full moon caused minor tidal flooding during four successive high tide cycles on the New Jersey side of the Delaware River and tidal sections of its tributaries. Tidal flooding began with the high tide just after midnight EDT on the 29th and ceased after the afternoon high tide on the 30th. The highest tides occurred with the high tide just after midnight EDT on the 29th. That high tide reached 10.26 feet above mean lower low water in Burlington. Minor tidal flooding begins at 9.0 feet above mean lower low water.

### **Camden County Central Portion**

<b>28</b>	<b>2344EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0655EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused heavy downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 2 and 4 inches with the highest amounts toward Philadelphia. Widespread poor drainage flooding occurred and flooding also occurred along the Cooper River. The Cooper River at Haddonfield was above its 2.8 foot flood stage from 1244 a.m. EDT through 755 a.m. EDT on the 29th. It crested at 2.98 feet at 315 a.m. EDT. Storm totals included 3.71 inches in Cherry Hill and 3.48 inches in Somerdale.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **NJZ020**

#### **Western Ocean**

<b>29</b>	<b>1915EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
	<b>2145EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused heavy downpours to occur during the late afternoon and throughout the evening of the 28th. Doppler Radar storm total estimates ranged from 1 inch in the southern part of the county to around 5 inches in the northern part of the county. This caused poor drainage and eventually minor flooding along the North Branch of the Metedeconk Creek. The North Branch of the Metedeconk Creek at Lakewood was above its 7 foot flood stage from 815 p.m. EDT through 1045 p.m. EDT on the 29th. It crested at 7.03 feet at 9 p.m. EDT. Storm totals included 5.16 inches in Point Pleasant, 2.47 inches in Lakehurst, 1.41 inches in Barnegat and 0.72 inches at Brant Beach.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

## NEW MEXICO, Central and North

### **Roosevelt County**

<b>10 E Milnesand</b>	<b>22</b>	<b>1915MST</b>	<b>0</b>	<b>0</b>	<b>Hail (1.00)</b>
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### **Roosevelt County**

<b>10 E Milnesand</b>	<b>22</b>	<b>1915MST</b>	<b>0</b>	<b>0</b>	<b>Thunderstorm Wind (G51)</b>
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### **Harding County**

<b>6 E Mills</b>	<b>24</b>	<b>1854MST</b>	<b>0</b>	<b>0</b>	<b>Hail (0.88)</b>
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### **Chaves County**

<b>Roswell to</b>	<b>26</b>	<b>1300MST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>15 S Roswell</b>		<b>1345MST</b>			

Heavy rain from Roswell south to Dexter-Hagerman filled streets to axle deep and flooded several crossing with 3 feet of water along the Felix River.

### **Roosevelt County**

<b>Elida to</b>	<b>26</b>	<b>1330MST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>Milnesand</b>		<b>1530MST</b>			

Heavy rain of 2 to 3 inches swept across southern Roosevelt County filling ditches and causing water ponding in many roads and dangerous high water of 3-5 feet at arroyo crossings.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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									September 2004
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>NEW MEXICO, Central and North</u></b>									
<b>Bernalillo County</b>									
15 W Albuquerque	29	1716MST			0	0			Hail (0.75)
<b>Bernalillo County</b>									
Albuquerque	29	1805MST 1850MST			0	0			Heavy Rain
Brief heavy rain brought yard and curb level street flooding to southeast and south central Albuquerque.									
<b><u>NEW MEXICO, South Central and Southwest</u></b>									
<b>Grant County</b>									
2 N Silver City	24	1430MST 1500MST			0	0			Hail (0.75)
Penny size hail accumulated to 2 inches with drifts to 8 inches.									
<b>Sierra County</b>									
9 S Truth Or Consequer	24	1455MST 1510MST			0	0	10K		Hail (1.75)
Hail accumulated to 4 inches on Interstate 25 south of Truth or Consequences, leading to multiple vehicle accidents. The largest hail reported by NMDOT was golf ball size.									
<b>Dona Ana County</b>									
14 N Las Cruces	29	1427MST 1445MST			0	0			Hail (1.00)
<b>Dona Ana County</b>									
25 NE Las Cruces	29	1515MST			0	0			Hail (0.88)
<b>Otero County</b>									
25 SW Alamogordo	29	1515MST			0	0			Hail (0.88)
<b>Dona Ana County</b>									
31 SW Las Cruces	29	1520MST			0	0			Hail (1.25)
<b>Dona Ana County</b>									
Vado	29	1550MST			0	0			Hail (1.00)
<b>Dona Ana County</b>									
3 SE Las Cruces	29	1615MST 1715MST			0	0			Flash Flood
<b>Dona Ana County</b>									
7 NW Sunland Park	29	1652MST			0	0			Hail (0.75)
<b>Dona Ana County</b>									
7 NW Sunland Park	29	1652MST			0	0			Thunderstorm Wind (G57)
<b>Otero County</b>									
Alamogordo	29	1705MST			0	0			Hail (1.00)
<b>Otero County</b>									
Alamogordo	29	1705MST			0	0	2K		Thunderstorm Wind (G61)
<b><u>NEW MEXICO, Southeast</u></b>									
<b>Lea County</b>									
Hobbs	04	2100MST 2200MST			0	0	0	0	Flash Flood
A line of thunderstorms moved across the southeastern plains of New Mexico during the late evening hours of the 4th. Local officials reported flash flooding in Hobbs. High water flowed through several city streets and some intersections were impassable.									
<b>Eddy County</b>									
4 N Queen to 8 NE Queen	21	1334MST 1745MST			0	0	0	0	Flash Flood
Storm spotters reported "significant" flash flooding along Last Chance Creek. Flood waters along the swollen creek crossed parts of Canal Street with more than five feet of flowing water.									
<b>Lea County</b>									
Eunice	21	1530MST 1645MST			0	0	25K	0	Flash Flood
Eunice law enforcement officials reported flash flooding that inundated city streets and resulted in several stalled vehicles. High water rescues of stranded motorists were conducted on Main Street. No injuries were reported.									

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **NEW MEXICO, Southeast**

### **Lea County**

**1 S Eunice      21      1530MST      0      0      15K      0      Thunderstorm Wind (G61)**

Severe thunderstorm winds damaged a trailer home just south of Eunice. A large tree also was uprooted.

Strong to severe thunderstorms affected southeastern New Mexico during the afternoon and evening of the 21st. Very heavy rainfall from this activity resulted in localized flash flooding. Thunderstorm winds also damaged a homestead near Eunice.

### **Lea County**

**2 W Lovington      22      2147MST      0      0      0      0      Thunderstorm Wind (G50)**

A line of strong to severe thunderstorms moved across the plains of southeastern New Mexico during the evening of the 22nd. An anemometer at the Lovington Airport measured a 58 MPH thunderstorm wind gust as the storms passed. Half inch diameter hail also was reported by the airport staff.

### **Lea County**

#### **Monument to**

**3 W Lovington      26      0230MST      0      0      0      0      Flash Flood**

**27      1500MST**

A prolonged period of widespread heavy rainfall began over the plains of southeastern New Mexico late on Saturday the 25th. By the early hours of Sunday the 26th, extensive flash flooding was occurring in Lea County. At 02:30 MST high water was reported flowing over State Highway 483 seven miles south of Lovington. Additional flash flooding occurred along a corridor from Lovington to Monument through early Monday the 27th.

Before daybreak Sunday morning, flash flooding caused high water to inundate State Highway 8, four miles north of Monument. A swollen draw near monument also produced flash flooding that covered several secondary roadways with flowing water.

Showers and thunderstorms continued to move northwest over Lea County during the afternoon and early evening hours. Numerous roads and highways in the vicinity of Lovington were affected by flash flooding by 20:00 MST. Flood waters submerged U.S. Highway 82 from Lovington to three miles west of the city.

A short-lived break in convective activity occurred during the late evening. Flash flooding continued, however, as runoff maintained flash flooding conditions over U.S. Highway 82 near Lovington.

Bands of showers and thunderstorms redeveloped by midnight MST over southern and central Lea County. This activity aggravated the flash flooding near Lovington along U.S. Highway 82 and caused additional flash flooding that affected several secondary roadways.

Moderate to occasionally heavy rainfall continued over central Lea County through early morning on Monday the 27th. At 12:00 MST local officials reported that U.S. Highway 82 west of Lovington remained closed due to flowing water. Flooding there receded by mid afternoon Monday.

### **Lea County**

#### **Eunice to**

#### **22 N Hobbs**

**26      0545MST      0      0      75K      0      Flash Flood**

**2100MST**

The widespread heavy rain resulted in a second corridor of extensive flash flooding over eastern Lea County from Eunice to north of Hobbs. At 05:45 MST Sunday the 26th, Hobbs officials reported flash flooding that resulted in eight inches of flowing water in many city streets.

By 09:57 MST the intersection of U.S. Highway 82 and State Highway 18 was inundated by flowing flood waters twenty-three miles north of Hobbs. At 12:24 MST, a truck stalled in the flooded intersection and local fire department officials conducted a high water rescue to bring the driver to safety.

At 12:45 MST Sunday a National Weather Service cooperative observer in Eunice reported a rainfall measurement of six inches since Saturday evening. Several secondary roadways were reported to be underwater in the Eunice area.

Additional rainfall throughout the day Sunday aggravated the flash flooding conditions in Hobbs. By 14:50 MST officials reported up to one and a half feet of flowing flood waters in some city streets. The worst flooding was reported along Main Street where several vehicles were stalled.

Flash flooding subsided across eastern Lea County by the afternoon hours Sunday.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW MEXICO, Southeast

### **Eddy County**

**9 NE Queen to  
Carlsbad**

26	0853MST				0	0	50K	0	Flash Flood
27	0045MST								

The widespread heavy rainfall had spread northwest across Eddy County by sunrise Sunday morning. Flash flooding quickly developed along the numerous creeks and draws that transport water from the mountainous areas of southwestern Eddy County toward Carlsbad. At 08:53 MST local officials reported that two and a half feet of flowing water crossed New Mexico State Highway 137 fifteen miles northeast of Queen. By 09:55 MST heavy rainfall over Carlsbad had resulted in more than half a foot of water covering many city streets.

Conditions deteriorated through the day as continued heavy rainfall combined with runoff that emptied into Carlsbad through Dark Canyon Draw. By 11:25 MST, several reports indicated that vehicles were stalled in flooded city streets. Additional stranded motorists were rescued from swiftly moving flood waters on Dark Canyon Road near County Road 408 southwest of the city. That intersection was inundated by over seven feet of rapidly flowing water. No injuries were reported.

Water running through Dark Canyon Draw continued to enter the southwest side of Carlsbad through late afternoon. At 16:30 MST over six feet of flowing water crossed Hidalgo Street and Dark Canyon Road. Flood waters gradually receded in Carlsbad through the evening hours. By 19:00 MST the heavy rainfall had ended, but the swollen Dark Canyon Draw continued to flood city streets in southwestern Carlsbad with four feet of water. The Carlsbad Police Department reported that all flooding in and around Carlsbad had subsided by 01:00 Monday.

### **Eddy County**

**15 S Artesia to  
Artesia**

26	1005MST 1230MST				0	0	0	0	Flash Flood
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Flash flooding conditions developed in the vicinity of Artesia and Lakewood during the late morning hours of Sunday the 26th. At 10:05 MST, local officials reported that one and a half feet of flowing water crossed the intersection of Fulton and Haldeman Roads one mile southeast of Artesia. Lakewood Road also was inundated by flash flooding between U.S. Highway 285 and Lakewood. In addition, the heavy rainfall caused small creeks and draws to swell. Eagle Draw in Artesia rapidly filled with flood waters and threatened U.S. Highway 82 by 12:00 MST. No reports of injuries or significant damage were received.

### **Eddy County**

**21 W Carlsbad**

26	1320MST				0	0	0	0	Flash Flood
27	0030MST								

Flash flooding along Rocky Arroyo, northwest of Carlsbad, resulted in three to four feet of flowing water over New Mexico State Highway 137, six miles southwest of the U.S. Highway 285 intersection.

Although heavy rainfall ended over Eddy County by 19:00 MST, runoff into Rocky Arroyo caused "significant" flash flooding to persist along County Road 401 through midnight MST Monday. The roadway was inundated by flowing water two miles west of New Mexico Highway 137.

### **Lea County**

**12 WNW Jal**

27	1515MST 2000MST				0	0	0	0	Flash Flood
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Another round of showers and thunderstorms produced heavy rainfall over southern Lea County on the morning of Monday the 27th. Flash flooding along State Highway 128 was reported by the Jal Police Department. High water flowed over the highway twelve miles west of Jal.

In summary, flash flooding became widespread across southeastern New Mexico on Sunday the 26th and persisted into Monday the 27th. Doppler radar estimated three day rainfall totals exceeding eleven inches across portions of Lea County by late Monday. The excessive rainfall caused flash flooding that inundated many area roadways. Motorists became stranded by flood waters in both Eddy and Lea Counties Sunday. No injuries were reported.

### **Eddy County**

**12 NW Carlsbad to  
2 SW Carlsbad**

27	0515MST 0800MST				0	0	0	0	Flash Flood
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Although heavy rainfall had temporarily ended over Eddy County, runoff from previous rains over the Guadalupe Mountains resulted in another flood wave that propagated though Dark Canyon Draw. Flash flooding in several Carlsbad neighborhoods resulted. County Road 408, Hidalgo, Radio, and Boyd Streets were all closed in the city's southwest side due to high water.

In addition, runoff through Rocky Arroyo made portions of New Mexico State Highway 137 and U.S. Highway 285 briefly impassable.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW MEXICO, Southeast

### **Eddy County**

3 SW Carlsbad to	29	2153MST			0	0	0	0	Flash Flood
17 ESE Carlsbad	30	1400MST							

Thunderstorms and heavy rainfall again developed over portions of southeastern New Mexico late on the 29th. Flash flooding was reported along Dark Canyon Draw from the area just south of Carlsbad, to Loving, to New Mexico State Highway 128 in eastern Eddy County. The first reports indicated three feet of flood waters flowing across County Road 408 at 21:53 MST. A fifty foot stretch of the road was submerged. Several streets that run into the side of Carlsbad were barricaded by local officials due to high water. Higby and Ogden Roads also were closed near Loving by 23:10 MST.

Runoff and occasional heavy rainfall continued to produce flash flooding at the same locations through the night. By 03:48 MST the Eddy County Sheriff's Office reported that flooding had spread east to New Mexico State Highway 128 in eastern Eddy County. Reports throughout the early morning hours of the 30th indicated little change in the flash flood threat with numerous roadways that remained submerged by high water.

Rainfall over the county ended by 10:00 MST. Runoff of the earlier heavy rains continued to result in flash flooding conditions, however, through early afternoon.

### **Lea County**

Hobbs	29	2325MST			0	0	0	0	Flash Flood
	30	0300MST							

The Hobbs Police Department reported that flash flooding caused high water to rendered several city streets impassable.

### **Eddy County**

Artesia	30	0745MST			0	0	0	0	Flash Flood
		0930MST							

Local officials reported that numerous city streets were inundated by high water as a result of flash flooding.

Showers and thunderstorms repeatedly tracked over portions of southeastern New Mexico late on the 29th and early on the 30th. With saturated ground conditions in place after recent flooding rains, isolated flash flooding quickly developed across parts of Eddy and Lea Counties.

### **Eddy County**

2 N Lakewood	30	1425MST			0	0	0	0	Hail (0.75)
		1535MST							

An isolated supercell thunderstorm developed over northern Eddy County during the afternoon hours of the 30th. This storm produced large hail as it affected the Lakewood area along U.S. Highway 285.

### **Eddy County**

2 N Lakewood to Carlsbad	30	1435MST			0	0	0	0	Flash Flood
		1630MST							

Flash flooding affected several city streets in Carlsbad and U.S. Highway 285 between Carlsbad and Lakewood after a round of strong to severe thunderstorms tracked across the area producing very heavy rainfall. Over one foot of water flowed out of several fields and crossed secondary roadways north of Carlsbad.

## NEW YORK, Central

### **Steuben County**

Woodhull to Bath	09	0600EST			0	0	3M		Flash Flood
		1600EST							

Flash flooding occurred in Tuscarora, Woodhull, Addison, Jasper, Rathbone, Canisteo, Erwin, Buena Vista, and Bath due to heavy rain. Rainfall amounts from the 8th into the 9th were 2.5 inches to around 5 inches in southeast Steuben County. The heavy rain was aided by tropical moisture from the remnants of hurricane Frances. Many streams and creeks were out of their banks. Several bridges were washed out or damaged beyond repair. The Freeman Bridge on County Route 85 near South Addison buckled when the foundation was disturbed. School was cancelled in a few towns. The worst hit area was along Route 417 and the Tuscarora Creek in the towns of Woodhull and Tuscarora. The road was closed and underwater. Several people were evacuated when water surrounded their homes. Several other roads were closed. Many homes had flooded basements. The state declared Steuben County a disaster area. A state of emergency was declared for the towns of Rathbone, Addison, Tuscarora, and Woodhull. The Tuscarora Creek at Addison rose over 11 feet in less than 12 hours. Campbell Creek in the town of Bath overflowed forcing the evacuation of one house's occupants on Campbell Creek Road.

### **NYZ024**

<b>Chemung</b>									
09	1400EST			0	0	500K		Flood	
10	0400EST								

Heavy rainfall from the remnants of hurricane Frances caused the Chemung River at Elmira to rise above its flood stage of 12 feet. The Chemung River at Elmira crested around 13 feet late on the 9th. Rainfall amounts were 1.5 to 4 inches with locally higher amounts across the Chemung River basin. Many roads were flooded and closed due to the river flooding in the Big Flats area.

### **NYZ022**

<b>Steuben</b>									
09	1500EST			0	0	200K		Flood	
	1800EST								

Heavy rainfall from the remnants of hurricane Frances caused the Cohocton River at Campbell to rise above its flood stage of 8 feet. The Cohocton River at Campbell crested at 8.1 feet early in the evening on the 9th. Rainfall amounts were 1.5 to 4 inches with locally higher amounts.











# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **NEW YORK, Coastal**

### **Orange County**

Monroe	28	1630EST 1710EST			0	0			Flash Flood
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Flash flooding was the cause of several road closures.

### **Richmond County**

West Portion	28	1630EST 1700EST			0	0			Flash Flood
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All lanes closed on Route 440 due to flash flooding.

### **Rockland County**

Suffern	28	1630EST 1710EST			0	0			Flash Flood
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Flash flooding resulted in the closure of several lanes on I-87.

### **Westchester County**

Tarrytown	28	1650EST 1720EST			0	0			Flash Flood
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Major flash flooding was the cause of several road closures.

### **Putnam County**

Mahopac	28	1655EST 1725EST			0	0			Flash Flood
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Flash flooding was the cause of highways and roads being closed.

### **Suffolk County**

Central Portion	28	1700EST 1800EST			0	0			Flash Flood
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Sunrise Highway closed with cars stranded due to Major flash flooding.

### **New York County**

East Portion	28	1705EST 1755EST			0	0			Flash Flood
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FDR Drive closed due to flash flooding.

### **Bronx County**

Central Portion	28	1715EST 1800EST			0	0			Flash Flood
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Bronx River Parkway closed at Hartsdale due to flash flooding.

### **Kings County**

South Portion	28	1725EST 1800EST			0	0			Flash Flood
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Belt Parkway closed due to flash flooding.

### **Queens County**

Woodside	28	1800EST 1845EST			0	0			Flash Flood
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Major highways and roads closed due to flash flooding.

### **Rockland County**

West Nyack	28	1830EST 1900EST			0	0			Flash Flood
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Numerous roads closed due to flash flooding.

### **Bronx County**

Central Portion	28	1850EST 1925EST			0	0			Flash Flood
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Sawmill River Parkway closed due to flash flooding.

### **Westchester County**

White Plains	28	1850EST 1920EST			0	0			Flash Flood
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Bronx River Parkway at White Plains closed due to flash flooding.

### **New York County**

East Central Portion	28	1901EST 1930EST			0	0			Flash Flood
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FDR drive closed due to flash flooding.

### **Kings County**

South Portion	28	1910EST 1940EST			0	0			Flash Flood
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Numerous roads closed due to flash flooding. Belt Parkway closed.

### **Richmond County**

West Portion	28	2000EST 2100EST			0	0			Flash Flood
--------------	----	--------------------	--	--	---	---	--	--	-------------

Route 440 closed due to a foot of water on the road.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW YORK, Coastal

<b>Kings County</b>									
South Portion	28	2045EST 2130EST			0	0			Flash Flood

Significant street flooding in Graves End.

<b>Queens County</b>									
Countywide	28	2100EST 2130EST			0	0			Flash Flood

Significant street flooding across Queens. BQE experienced major flash flooding.

<b>Rockland County</b>									
Central Portion	28	2130EST 2230EST			0	0			Flash Flood

Major roads closed in Clarkstown due to flash flooding.

<b>Bronx County</b>									
North Portion	28	2145EST 2200EST			0	0			Flash Flood

Roads closed due to flash flooding.

<b>New York County</b>									
East Portion	28	2145EST 2215EST			0	0			Flash Flood

FDR drive closed once again due to flash flooding.

<b>Westchester County</b>									
Mt Vernon	28	2145EST 2210EST			0	0			Flash Flood

Two lanes closed on I-87 due to flash flooding.

<b>Orange County</b>									
Cornwall	28	2200EST 2230EST			0	0			Flash Flood

Major flash flooding with several streets closed.

The remnants of Hurricane Jeane dropped anywhere between 3 and 6 inches across Southeastern New York State on September 28th. This resulted in numerous occurrences of flash flooding across the area.

## NEW YORK, East

<b>Greene County</b>									
Windham	17	2330EST			0	0			Flash Flood

Pond overflowed onto Route 296.

<b>Greene County</b>									
Leeds	18	0600EST 1100EST			0	0			Flash Flood

Officials closed a section of County Route 23B in Leeds, and many other creekside roads were closed as well. In addition, scattered power outages were reported due to the flooding.

<b>Greene County</b>									
Kiskatom	18	1130EST 1230EST			0	0			Flash Flood

Mountain Turnpike Road closed to all vehicle traffic. Two people trapped in car in parking lot of Friar Tuck Inn. Emergency Personnel called to scene.

<b>Ulster County</b>									
Phoenicia	18	0040EST 0140EST			0	0			Flash Flood

Streams in the area flowed over County Route 40.

<b>Albany County</b>									
Coeymans	18	0630EST 0730EST			0	0			Flash Flood

Trailer park flooded by Hannacrois Creek.

<b>Albany County</b>									
Rensselaerville	18	0630EST 0730EST			0	0			Flash Flood

Potter Hollow Mountain Road flooded.

<b>Schoharie County</b>									
Seward	18	0730EST 0830EST			0	0			Flash Flood

Lowe Road and Clearview Road flooded.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NEW YORK, East

### **Greene County**

#### **Jewett**

**18 1300EST** **0 0** **Flash Flood**  
**1700EST**

Route 77 closed due to flooding.

#### **NYZ040**

### **Montgomery**

**18 0810EST** **0 0** **Flood**  
**19 0900EST**

The Schoharie Creek exceeded its flood stage of 6.0', cresting at 7.71' at 04:31 EST on 9/19/04 at the Burtonsville gage. The Schoharie Creek also exceeded its flood stage of 6.0', cresting at 7.71' at 23:31 EST on 9/18/04 at the Burtonsville gage. The Mohawk River exceeded its flood stage of 281.0', cresting at 282.30' at 05:00 EST on 9/19/04 at the Tribes Hill gage. The Mohawk River also exceeded its flood stage of 188.0', cresting at 188.02' at 04:46 EST on 9/19/04 at the Crescent Dam gage. In addition, flooding along the Mohawk River caused fishing boat to sink near the St. Johnsville Marina, and heavy rain flooded the Schoharie Creek, causing the closure of Island Road.

### **Rensselaer County**

#### **Schodack Center**

**18 1103EST** **0 0** **Flash Flood**  
**1203EST**

State Route 150 closed in a number of locations due to flooding.

### **Greene County**

#### **Catskill**

**18 1310EST** **0 0** **Flash Flood**  
**1410EST**

Catskill Creek flooded Cauterskill Road. Person trapped in car, Fire and Rescue on scene.

#### **NYZ054**

### **Eastern Rensselaer**

**18 2122EST** **0 0** **Flood**  
**19 0409EST**

The Hoosic River exceeded its flood stage of 11.0', cresting at 11.43' at 00:30 EST on 9/19/04 at the Eagle Bridge gage.

## NEW YORK, North

### **NYZ035**

### **Eastern Essex**

**09 1230EST** **0 0** **5K** **Flood**  
**1800EST**

The remnants of Hurricane Frances resulted in heavy rain across the area. Generally between 2 and 3 inches of rainfall (locally higher in the mountains) was reported. At 1230 PM EST (130 PM EDT) the Bouquet River flooded Route 9 with additional minor flooding reported in the town of New Russia. Later in the afternoon, around 2 PM EST (3 PM EDT), the Bouquet River resulted in minor flooding in the Elizabethtown area and Route 8. By evening the flood waters receded.

## NEW YORK, West

**NYZ001>004-011>012-019>021-021** **Niagara - Orleans - Monroe - Wayne - Genesee - Wyoming - Chautauqua - Cattaraugus - Allegany**

**09 0300EST** **1 0** **3.7M** **Flood**  
**11 2200EST**

Western and central New York were inundated by drenching rains as the remnants of hurricane Frances drifted north across the region on Thursday September 9th. Areawide rainfall totaled 3 to 5 inches with the bulk of it falling in a 6 to 9 hour period from very late Wednesday to midday Thursday. Several creeks in the Buffalo and Rochester areas recorded their greatest flows and highest gage levels ever in a non-winter/spring season. Cazenovia Creek at Ebenezer was above the 10 foot flood stage from 6AM to 8PM Thursday the 9th, cresting at 14.85 feet. Buffalo Creek at Gardenville was above the 7 foot flood stage from 9AM to 8PM Thursday the 9th, cresting at 8.71 feet. Cayuga Creek at Lancaster was above the 8 foot flood stage from 8AM to 7PM Thursday the 9th, cresting at 9.59 feet. Allegheny River at Salamanca was above the 12 foot flood stage from 4PM Thursday the 9th to 1AM Friday the 10th, cresting at 12.33 feet. Oatka Creek at Garbutt was above the 6 foot flood stage from 6PM Thursday the 9th to 2AM Friday the 10th, cresting at 6.18 feet. Black Creek at Churchville was above the 6 foot flood stage from 1AM Friday the 10th to 11PM Saturday the 11th, cresting at 7.85 feet. Ellicott Creek at Williamsville was above the 8 foot flood stage from 5AM to 11PM Friday the 10th, cresting at 9.87 feet. Tonawanda Creek at Batavia was above the 9 foot flood stage from 5AM to 9PM Friday the 10th, cresting at 10.12 feet. The heaviest rain was in a swath from Chautauqua county northeast across Erie and Niagara counties to Monroe and western Wayne counties. This area had between 3.5 and 4.5 inches with a few spots near Chautauqua Lake measuring 5 inches. Amounts tapered off to the south and east, but a good 2 to 3 inches still fell over Allegany county, the Finger Lakes and areas east of Lake Ontario. In Cowlesville, Wyoming county, a three-year-old boy drowned when he was swept away by flood waters while playing near a stream. His body was recovered further downstream along the banks of Cayuga Creek in Alden. M3IW

## NORTH CAROLINA, Central

### **Anson County**

#### **1 NE Morven to 3 NE Morven**

**07 1324EST** **2 75** **0 0** **Tornado (F1)**  
**1330EST**

A tornado touched down just northeast of Morven along Highway 145. Trees and power lines were blown down along the road and two turkey barns were destroyed, with thousands of turkeys killed. The damage was generally contained to an area off Highway 145, Diggs Road and Old NC 85.







# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NORTH CAROLINA, Central

### Moore County

1 S Southern Pines to  
4 N Pinehurst

27    **1641EST**                      **8**        **200**                      **0**        **0**                      **Tornado (F1)**  
   **1700EST**

A tornado touched down at the Elks Golf Club just south of Southern Pines. Over 200 trees were snapped or uprooted at the golf course, a few large trees were blown down north of the golf course, and more were blown down onto homes in a neighborhood east of Broad Street and south of Morganton Road. A small shopping center on Broad Street sustained roof and wall failure, and damage was noted at a car dealership as well. The tornado lifted, and touched down again at the Memorial Park Ball Diamonds, where F0 damage was noted. Partial roof damage occurred to several homes in a neighborhood along US Highway 1 and Massachusetts Avenue. Several large trees were blown onto houses between Glover and Carlisle Streets in Pinehurst. The tornado weakened as it crossed the Plantation Golf Club, and as it crossed Midland Road, minor property damage occurred. The Mid-South Country Club lost about 250 trees, and the Midland Country Club sustained significant tree damage. Twelve cars in the Midland parking lot were destroyed. In all, the tornado damaged 121 buildings, eight of which were destroyed.

### Moore County

Parkwood

27    **1720EST**                      **0.5**        **25**                      **0**        **0**                      **Tornado (F0)**  
   **1722EST**

A tree was blown down onto a mobile home.

### Wake County

4 SE Apex to  
1 N Apex

27    **1830EST**                      **4**        **50**                      **0**        **0**                      **Tornado (F0)**  
   **1836EST**

A tornado touched down near the intersection of Holly Springs Road and Kildaire Farm Road. Minor property damage occurred to a few mobile homes, and a few trees and power lines were blown down. The tornado lifted briefly, and then touched down again on the north side of Apex where several large trees were blown down, especially near the intersection of Schiefflin Road and James road, and along Culvert Street.

### Richmond County

2 S Plainview

27    **1845EST**                      **0.5**        **25**                      **0**        **0**                      **Tornado (F0)**  
   **1847EST**

A tornado touched down briefly in far northeast Richmond County, along Jones Spring Church Road and State Road 1458, blowing down trees and power lines.

### Montgomery County

Star

27    **1910EST**                      **1**        **50**                      **0**        **0**                      **Tornado (F0)**  
   **1915EST**

A tornado touched down in Star. A tree was blown down onto a home, and several outbuildings were destroyed at that same residence. At another residence, a large 100-year-old barn was moved about two feet off its foundation, a large chicken coop was destroyed. Siding and structural damage was sustained to the house, and the chimney was blown off. Several trees were snapped or uprooted along the tornado's path.

### Forsyth County

Winston Salem

27    **2230EST**    **0**        **0**                      **Flash Flood**  
28    **0400EST**

Several blocks of downtown Winston-Salem were flooded. One apartment complex had to be evacuated.

### Guilford County

10 W Greensboro

27    **2310EST**    **0**        **0**                      **Flash Flood**  
28    **0400EST**

Flooding occurred on Battleground Avenue in Greensboro, as well as along Airport Road and Interstate 40 from the Piedmont-Triad International Airport west to the Forsyth County Line.

### Davidson County

Countywide

27    **2340EST**    **0**        **0**                      **Flash Flood**  
28    **0400EST**

Several roads throughout Thomasville flooded with one to two feet of water and had to be closed. In Lexington, flash flooding was reported on Winston Road, Highway 29, Highway 70, and South Main Street, and numerous roads had to be closed.

### Stanly County

Albemarle

28    **0100EST**    **0**        **0**                      **Flash Flood**  
   **0215EST**

Several roads in Albemarle had at least a foot of water on them and had to be closed.

### Randolph County

Asheboro

28    **0159EST**    **0**        **0**                      **Flash Flood**  
   **0500EST**

Numerous roads were flooded throughout the county. Waist-deep water was reported on North and South Church Streets in Asheboro. One to two feet of water was reported across East Central Avenue in Asheboro.

### Durham County

Durham

28    **0420EST**    **0**        **0**                      **Thunderstorm Wind (G60)**

Straight-line winds near Interstate 85 and Club Boulevard downed trees and blew over a fence along the back lot of the Starlight Drive-In. One of the panels from the fence blew through a double-pane window at a residence across the street. Minor roof damage, mostly missing shingles, occurred at other residences along the same block.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NORTH CAROLINA, Central Coastal

**Carteret County**  
4 SE Newport      17      2030EST      0      0      Thunderstorm Wind (G50)

Large trees blown down.

**Martin County**  
4 NW Oak City to      27      1900EST      0.2      100      0      0      100K      Tornado (F1)  
40 NW Oak City

A house was partially destroyed with a back wall blown out and a porch removed. Four large storage bins were completely destroyed with debris strewn for one quarter mile to the northeast.

## NORTH CAROLINA, Extreme Southwest

**NCZ061**  
Clay  
16      1840EST      0      0      15K      Tropical Depression

Numerous trees and power lines were reported down across the county.

**NCZ060**  
Cherokee  
16      1845EST      0      0      15K      Tropical Depression

Numerous trees and power lines were reported down across the county.

## NORTH CAROLINA, North Coastal

**Northampton County**  
1 NW Jackson      08      0730EST      3      100      0      0      5K      Tornado (F0)

F0 tornado had non-continuous path length of 3 miles and path width of 100 yards. Approximately 3 touchdowns with some tree damage, roof damage to one home, and storage trailer picked up and turned over.

**Currituck County**  
Corolla      22      0815EST      1      0      Rip Current

Drowned after trying to save others from a rip current near the Whalehead Beach community.  
M35IW

**Currituck County**  
Corolla      23      1100EST      1      0      Rip Current

Drowned in a rip current near the Pine Island community.  
M35IW

## NORTH CAROLINA, Northwest and North Central

**NCZ001>003-005-018** Ashe - Alleghany - Surry - Rockingham - Watauga  
07      2015EST      0      0      2M      185K      Flood  
09      1145EST

The remnants of Tropical Depression Frances brought flooding rains to portions of Northwest North Carolina from late in the evening on the 7th through the 8th. Rainfall totals averaged 4 to 6 inches...with amounts higher in portions of the mountains.

In Watauga County, the Watauga River flooded, leading to evacuations of homes in the Foscoe area. The headwaters of the New River, including the Middle and East Fork also flooded. A mud slide destroyed one home in the Bamboo area.

In Ashe County, small streams and creeks flooded during the early morning of the 8th. Subsequently, the rainfall and runoff lead to the South Fork of the New River flooding later that morning. Several roads were flooded in the Fleetwood and Crumpler areas. Several homes along the South Fork of the New River were isolated as roads were flooded.

In Alleghany County, creeks and streams overflowed their banks and flooded 1150 acres of farmland resulting in crop damage.

Across Rockingham County, several creeks flooded their banks. Numerous roads were flooded and damaged. Some homes were evacuated.

In Surry County, Floodwaters from creeks and streams closed 20 roads.

**NCZ020**  
Yadkin  
08      0515EST      0      0      Flood  
1955EST

The remanants of tropical depression Frances brought a moderate flood along the Yadkin river. At Elkins, the Yadkin river rose above the 16.0 flood stage at 0515 am on the 8th, crested at 19.91 feet during the afternoon and fell below flood stage at 19:55 pm during the evening of the 8th.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## NORTH CAROLINA, Northwest and North Central

### Rockingham County

**10 SW Wentworth 08 1058EST 0 0 Thunderstorm Wind (G55)**

A severe thunderstorm with damaging winds, from the remnants of Tropical Depression Frances, downed several trees during the morning of the 8th.

### NCZ001>002-018-018 Ashe - Alleghany - Watauga

**17 0045EST 0 0 High Wind (G50)**  
**0705EST**

The remnants of Hurricane Ivan brought high winds to the mountains of northwest North Carolina during the morning of the 17th. These high winds brought trees down across Alleghany, Ashe, and Watauga counties. Residents in Ashe and Watauga county sustained power outages.

### Rockingham County

**5.5 S Ellisboro to 17 1012EST 9.3 50 0 0 Tornado (F1)**  
**.5 E Madison 1025EST**

A severe thunderstorm produced a weak tornado during the morning of the 17th. The Rockingham County tornado originated in Guilford County (see Storm Data for North Carolina, Central), and crossed into Rockingham County at 1012 EST, just east of Ellisboro Road. The tornado then crossed Ellisboro Road and caused damage to several structures. The hardest hit of these was a doublewide trailer home that was completely destroyed. The tornado zigzagged several times as it moved north to its termination point 0.5 miles east of Madison at 1025 EST. Path width varied from 25 to 50 yards.

### NCZ003

**Surry 18 0030EST 0 0 High Wind (G50)**

High winds on the backside of the remnants of Hurricane Ivan brought down trees and powerlines across Surry County during the early morning of the 18th.

### NCZ001>003-018-018 Ashe - Alleghany - Surry - Watauga

**18 0030EST 0 0 High Wind (G55)**  
**0705EST**

### NCZ018

**Watauga 18 0545EST 0 0 Flood**

### NCZ018

**Watauga 18 0545EST 0 0 Landslide**

Damaging gradient winds in the early morning hours of 18 Nov 2004 behind the exiting remnants of hurricane Ivan downed numerous trees and power lines. 2000 people were without power in Ashe Co. Locally heavy rain around the Foscoe area of Watauga Co. prompted flooding of small streams and mudslides.

### Stokes County

**Danbury 28 0031EST 0 0 Flash Flood**  
**0630EST**

### Surry County

**Pilot Mtn 28 0031EST 0 0 Flash Flood**  
**0330EST**

### Yadkin County

**Yadkinville 28 0031EST 0 0 Flash Flood**  
**0330EST**

### Yadkin County

**East Bend 28 0155EST 0 0 Flash Flood**  
**0330EST**

Heavy rains from the remnants of Hurricane Jeanne resulted in flashing flooding during the morning of the 28th in Stokes, Surry and Yadkin counties. Several roads were closed due to high water in Stokes, Surry and Yadkin. Law Enforcement reported an elementary school flooded in Danbury, Stokes county.

## NORTH CAROLINA, South Coastal

### New Hanover County

**Wilmington 01 1350EST 0 0 Heavy Rain**  
**1500EST**

Heavy rain produced street flooding on Oleander Drive and Dawson Street. Flooding was also reported on the 7400 block of Market Street southbound.





# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>NORTH CAROLINA, Southwest</u></b>									
<b>NCZ071</b>	<b>Mecklenburg</b>								
	<b>07</b>	<b>1530EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		<b>2100EST</b>							
Heavy rainfall associated with the remnants of Hurricane Frances caused some flooding of small creeks in the Charlotte area.									
<b>NCZ066&gt;067</b>	<b>Polk - Rutherford</b>								
	<b>07</b>	<b>1530EST</b>			<b>0</b>	<b>0</b>	<b>1.9M</b>	<b>900K</b>	<b>Flood</b>
	<b>08</b>	<b>1700EST</b>							
Flooding expanded to the southern foothills by late afternoon, as small streams and creeks overflowed their banks in Polk County, and the Rocky Broad River exceeded flood stage in the Lake Lure and Chimney Rock areas. The situation gradually worsened and expanded during the evening and overnight hours, as flooding developed along the Green River and Silver Creek, and evacuations became necessary along the Rocky Broad. Several public buildings and private residences were damaged and at least one home destroyed by flood water. In Rutherford County, the Riverwalk over the Rocky Broad was washed away for the second time in 8 years. In addition, numerous roads and bridges were washed out or covered with water.									
<b>NCZ053</b>	<b>Buncombe</b>								
	<b>07</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>	<b>40M</b>	<b>1M</b>	<b>Flood</b>
	<b>08</b>	<b>1100EST</b>							
<b>NCZ053</b>	<b>Buncombe</b>								
	<b>08</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>	<b>10M</b>		<b>Landslide</b>
		<b>0500EST</b>							
Flooding began during the late afternoon across the county and gradually worsened during the evening and overnight hours, with near-record flooding observed along the Swannaoa and French Broad Rivers. Most valley communities across the county were affected by severe flooding along the rivers, or along smaller streams. Flooding along the Swannanoa devastated Asheville's Biltmore area, as well as the Black Mountain and Swannanoa communities. Numerous businesses and residences were damaged or destroyed by flood waters. Widespread damage to roads and bridges also occurred, either due to flooding or landslides.									
<b>NCZ051-059-062&gt;063</b>	<b>Swain - Northern Jackson - Macon - Southern Jackson</b>								
	<b>07</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>	<b>300K</b>	<b>576K</b>	<b>Flood</b>
	<b>08</b>	<b>0800EST</b>							
<b>NCZ059-063</b>	<b>Northern Jackson - Southern Jackson</b>								
	<b>08</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Landslide</b>
		<b>0500EST</b>							
Flooding developed in the early evening in areas near the Blue Ridge, from Highlands to Cashiers, then quickly spread to include locations such as Cullowhee, Bryson City, and Cherokee. Jackson and southern Macon counties were the hardest hit, as numerous creeks and streams flooded, including the Little Tennessee River. Several homes and businesses were damaged and a few private dams were breached or damaged in Macon County. Several sections of highway 281 were washed out in Jackson County. By early morning of the 8th, flood gates were open on all Jackson County dams, and numerous rescues and evacuations were underway.									
<b>NCZ033&gt;034-049&gt;050-054&gt;055</b>	<b>Avery - Caldwell - Yancey - Mitchell - McDowell - Burke</b>								
	<b>07</b>	<b>1730EST</b>			<b>0</b>	<b>0</b>	<b>25M</b>	<b>5.5M</b>	<b>Flood</b>
	<b>08</b>	<b>1700EST</b>							
<b>NCZ033&gt;034-049&gt;050</b>	<b>Avery - Caldwell - Yancey - Mitchell</b>								
	<b>08</b>	<b>0000EST</b>			<b>0</b>	<b>0</b>	<b>4.5M</b>		<b>Landslide</b>
		<b>0500EST</b>							
Persistent moderate to heavy rain led to widespread flooding along numerous creeks and streams across the northern foothills and northern mountains during the early evening. By early morning on the 8th, flooding was described as some of the worst in the history of the area. Numerous homes and businesses were damaged or destroyed, particularly in Avery County. One home in Burke County was swept down the Little River. Widespread damage and destruction to roads and bridges also occurred due to flooding or landslides, especially in the southern part of Mitchell County, which experienced severe flooding from Crabtree Creek and the Toe River. Large sections of the Blue Ridge Parkway were washed out. Total damage to the parkway was estimated to be in excess of 10 million dollars in western North Carolina, with the vast majority of that damage occurring between Asheville and Blowing Rock.									
<b>Henderson County</b>									
<b>South Portion</b>	<b>07</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
	<b>08</b>	<b>0000EST</b>							
<b>Polk County</b>									
<b>Countywide</b>	<b>07</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
	<b>08</b>	<b>0000EST</b>							





# Storm Data and Unusual Weather Phenomena

September 2004

									September 2004
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<b><u>NORTH CAROLINA, Southwest</u></b>									
<b>NCZ033-048&gt;053-058&gt;059-062&gt;065</b>									
<b>Avery - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson</b>									
	16	1700EST			1	1	1.6M		High Wind (G55)
	17	0300EST							
High winds developed across the mountains, as the remnants of Hurricane Ivan moved just west of the area. Locations near the southern exposure of the Blue Ridge were the hardest hit, with major damage occurring in and around Highlands, Cashiers, Brevard, and southern Henderson County. Thousands of trees were blown down, including 90,000 apple trees in Henderson County. Numerous trees fell on structures and vehicles. A 55-year-old man was killed shortly after midnight near Hendersonville, when a tree fell through his house. Hundreds of structures in Henderson County were damaged by fallen trees and debris. A woman in Highlands was injured when a tree limb hit her in the head. M55PH									
<b>NCZ051-058-062</b>									
<b>Swain - Graham - Macon</b>									
	16	2000EST			0	0	4.2M	500K	Flood
	17	1900EST							
<b>Macon County</b>									
7 SE Franklin	16	2110EST			0	1	50K		Thunderstorm Wind (G65)
A mobile home at the base of Fishhawk Mountain was destroyed in the Peaks Creek community. The home's resident was injured when debris from the collapsing home fell on him. At least one other home was damaged in the area.									
<b>NCZ062</b>									
<b>Macon</b>									
	16	2130EST			4	9	1.6M		Landslide
A landslide (debris flow) began at the top of Fishhawk Mountain and flowed through the Peaks Creek valley. The slide, consisting of water, boulders, trees, mud, and other debris, destroyed or severely damaged 20 to 30 homes and mobile homes. Four people and an unborn child were killed as their homes were overwhelmed by the debris. F54PH, M3PH, F49PH, M57PH									
In response to persistent moderate to heavy rainfall associated with the remnants of Hurricane Ivan, severe flooding developed across the mountains for the second time in 9 days. Flooding first developed across the southwest mountains, when several small streams and creeks overflowed their banks, including Toot Hollow Creek near Bryson City. Several rescues were required during the evening in Macon County, as creeks and streams began to threaten homes. Overnight, flooding became more widespread, with Macon County enduring the worst of it. The Little Tennessee River overflowed its banks during the early morning of the 17th, and continued to flood through much of the day. The river flooded an industrial park in Macon County, causing extensive damage. In Swain County, 500,000 gallons of raw sewage and numerous natural gas tanks were swept down the river. Hundreds of structures were damaged or destroyed, and several private bridges were swept away. Portions of highways 105, 64, and 28 were all closed in Macon County, some due to major damage that was estimated to take several months to repair. In addition, a trout farm lost 60,000 pounds of fish.									
<b>NCZ059-063</b>									
<b>Northern Jackson - Southern Jackson</b>									
	16	2100EST			0	0	500K		Flood
	17	1900EST							
<b>NCZ059-063</b>									
<b>Northern Jackson - Southern Jackson</b>									
	17	0000EST 0500EST			0	0	100K		Landslide
After an extended period of moderate to heavy rainfall, flooding began in Jackson County during the late evening. Cope Creek was the first stream to flood, and evacuations became necessary along the creek. Evacuations also occurred along the Tuckaseegee River, as flooding became quite severe overnight, exceeding the magnitude of the flood associated with Frances only 9 days earlier. Severe flooding also occurred along Scotts Creek, Caney Fork, and Cullowhee Creek. Scotts Creek covered Front Street in Dillsboro with 3 to 4 feet of water. Several landslides occurred, one of which destroyed several storage units at Lake Glenville. Large sections of some roads were washed out by slides or flood water, including portions of highways 19A, 281, 64, and 107, all of which were closed for long periods.									
<b>NCZ052</b>									
<b>Haywood</b>									
	16	2130EST			3	0	15M		Flood
	17	1900EST							
F69VE, F27VE, M4VE									
<b>NCZ052</b>									
<b>Haywood</b>									
	17	0000EST 0500EST			0	0			Landslide

After an extended period of moderate to heavy rainfall, flooding developed first across the western part of the county, when several secondary roads became covered with water. During the overnight hours, flooding overspread the county, affecting most valley communities, which endured the second devastating flood event in just 9 days. Severe flooding developed first along Allens and Hyatt Creeks, followed by another round of severe flooding along the Pigeon River, which reached a record of 23 feet in Canton. A 69-year-old woman died when she attempted to drive her vehicle through the flooded river in Canton. A 27-year-old woman and her 4-year-old son were also killed during the evening of the 18th, when the woman attempted to drive her SUV through the flooded Pigeon River which was flowing over a Forest Service road off of I-40. Numerous businesses and hundreds of homes were

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **NORTH CAROLINA, Southwest**

damaged or destroyed by flood water or landslides. The river washed out a large portion of interstate 40 near the Tennessee border. Numerous other roads and highways were damaged in places, including highways 209, 215, 19, and 276.

**NCZ053**

### **Buncombe**

**16 2230EST**

**2 0 40M Flood**

**17 1930EST**

**M32VE, M28VE**

**NCZ053**

### **Buncombe**

**17 0000EST**

**0 0 10M Landslide**

**0500EST**

After many hours of moderate to heavy rainfall, gradual rises on creeks and streams resulted in the second devastating flood across the county in just 9 days. Flooding first began around Candler, but eventually affected every valley community in the county. Flooding was actually more widespread than during the Frances flood, but was not quite as severe. Virtually every stream in the county flooded, including the French Broad River. Two males, ages 32 and 28, died in Leicester when they attempted to cross a flooded area in a pickup truck. Hundreds of roads were flooded and the bridge over highway 197 in Barnardsville was washed out. The French Broad flooded the studios and other businesses in the River District in downtown Asheville. At Enka, a motel was flooded, which necessitated the rescue of 40 people. Numerous homes were destroyed or severely damaged by flood water or landslides.

**NCZ048**

### **Madison**

**16 2300EST**

**0 0 8M 920K Flood**

**17 1900EST**

After hours of heavy rain, gradual rises along creeks and streams culminated in flooding across the county by midnight. The first streams to flood were Spring Creek in Hot Springs and Big Pine Creek west of Marshall. By sunrise on the 17th, virtually every stream in the county had flooded. Flooding was quite severe, as most stream levels exceeded those of recent memory. Southwest of Marshall, 4 feet of water from Sandymush Creek entered the basement of a home located 100 feet north and 10 feet above the upper banks of the creek. Long-time residents described the flooding as the worst in at least 25 years.

**NCZ064**

### **Transylvania**

**16 2300EST**

**0 0 1.5M 1.9M Flood**

**17 1900EST**

Flooding began across the county around midnight, as Rosman was evacuated when the French Broad River began to flood. Overnight, flooding spread across much of the remainder of the county, with evacuations required in the Duckworth and Pisgah Forest areas. Numerous roads were closed due to flood damage, including portions of highway 276, which were closed for several days.

**NCZ034-054>055-066>067**

### **Caldwell - McDowell - Burke - Polk - Rutherford**

**16 2300EST**

**0 0 20K High Wind (G50)**

**17 0500EST**

The remnants of hurricane Ivan continued to cause strong enough winds to down a number of trees and power lines across the foothills. A few fell on structures and vehicles, and there were scattered power outages. The most concentrated damage was in the southern foothills, especially in Saluda in Polk County.

**NCZ049**

### **Yancey**

**17 0000EST**

**0 0 200K 0.90K Flood**

**1900EST**

After an extended period of moderate to heavy rainfall, flooding began shortly after midnight. Almost every stream in the county reached or exceeded flood stage. Numerous roads were closed due to high water, and a mobile home park was evacuated when up to 1.5 feet of water entered some of the trailers.

**NCZ067**

### **Rutherford**

**17 0000EST**

**0 0 100K Flood**

**1100EST**

Flooding began in the northwest part of the county shortly after midnight, when the Rocky Broad River rose to a higher level than what was observed during the Frances flood 9 days earlier. However, the river's crest was brief. Other smaller streams flooded throughout the morning.

**NCZ033**

### **Avery**

**17 0100EST**

**0 0 500K Landslide**

**0600EST**

**NCZ033>034-050-054>055**

### **Avery - Caldwell - Mitchell - McDowell - Burke**

**17 0100EST**

**0 0 8.2M 4M Flood**

**1900EST**

Flooding began shortly after midnight across much of the northern mountains and northern foothills. The hardest hit locations were northern McDowell, Mitchell and Avery Counties, where flooding was at least as severe as that which accompanied Frances. Most of the streams in Mitchell County flooded. Property damage due to mudslides and flooding was extensive in Avery County, and

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **NORTH CAROLINA, Southwest**

there were numerous rescues and evacuations, particularly around Newland. Numerous roads were washed out, covered with water, or covered with debris from landslides. All roads into Banner Elk were impassable by sunrise on the 17th. Other roads affected included portions of highways 226, 221, and 19. A bridge was washed out on highway 194 in Avery County. Flooding was much less severe in Burke and Caldwell Counties, although some evacuations were required along the John's River in Caldwell County, and portions of highways 181 and 126 were closed briefly in Burke County.

### **NCZ065>066**

#### **Henderson - Polk**

17	0100EST	0	0	3.1M	5.7M	Flood
	1900EST					

Flooding began shortly after midnight across portions of the southern mountains and foothills. Henderson County experienced the most severe flooding, as numerous homes were damaged by flood waters, with damaged homes from the combination of the Ivan and Frances floods numbering in the hundreds. Residents described the small stream flooding experienced in Henderson County as the worst seen in many years. Numerous roads were blocked by high water, including highways 64, 280, and 25. The situation was much less serious in Polk County, although flooding did develop along the Pacolet River and several of its tributaries, as well as some creeks in the Columbus area.

### **Cleveland County**

#### **Waco**

17	0505EST	0.9	40	0	0	50K	Tornado (F0)
	0506EST						

This brief tornado blew down numerous trees and power lines along Hatcher and Costner Roads in the town of Waco. Some trees fell on vehicles and homes. Roofs were blown off of a barn and a chicken house. The metal roof of a porch was also blown off. In addition, 2 power poles and a street light were snapped.

### **NCZ033>035-048>055-059-063>067**

#### **Avery - Caldwell - Alexander - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - McDowell - Burke - Northern Jackson - Southern Jackson - Transylvania - Henderson - Polk - Rutherford**

17	2000EST	0	0	75K	High Wind (G50)
18	0900EST				

As the remnants of Ivan retreated toward the mid-Atlantic region, high pressure building in behind the circulation caused a resurgence of strong winds across the mountains and foothills. This resulted in additional tree and power line damage.

### **Transylvania County**

#### **Brevard**

27	2115EST	0	0	Flash Flood
	2300EST			

Heavy rain bands associated with the remnants of Hurricane Jeanne produced the third flood episode in three weeks across western North Carolina. However, flooding was much less severe and more short-lived than what was experienced during Frances and Ivan. In Transylvania County, several small streams and creeks rose quickly, covering a few roads with water.

### **Cleveland County**

#### **Patterson Spgs to 2 NNW Patterson Spgs**

27	2200EST	2	30	0	0	50K	Tornado (F1)
	2203EST						

This tornado touched down near the community of Patterson Springs, blowing down numerous trees and power lines along its 2-mile track. Some of the trees fell on homes. Several outbuildings were also destroyed.

### **Mecklenburg County**

#### **Charlotte**

27	2300EST	0	0	Flash Flood
28	0200EST			

### **Union County**

#### **Monroe to Stallings**

27	2300EST	0	0	Flash Flood
28	0200EST			

Moderate to heavy rain fell through much of the early evening hours, but flooding developed rapidly around midnight, as an intense tropical rain band produced around 2 inches of rain across the area in a 2-to-3 hour span. Overflowing streams caused flooding of numerous roads in areas from Monroe northward to Charlotte and vicinity.

### **Henderson County**

#### **Countywide**

27	2300EST	0	0	1K	Flash Flood
28	0200EST				

Heavy rain associated with the remnants of Hurricane Jeanne resulted in the third flood event in three weeks across the county. However, this event was minor in comparison with the previous floods. A couple of roads were flooded near Etowah and Fletcher, while the Rocky Broad River went above flood stage at Bat Cave, flooding one lane of highway 64/74a.

### **Rutherford County**

#### **Lake Lure**

27	2310EST	0	0	Flash Flood
28	0300EST			

The Rocky Broad River rose rapidly to flood in the Lake Lure and Chimney Rock areas, with water encroaching on highway 64/74a in the Lake Lure community. Other smaller streams also flooded around Lake Lure.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## NORTH CAROLINA, Southwest

### Rowan County

Kannapolis to  
China Grove

28

0015EST  
0300EST

0

0

Flash Flood

After an evening of moderate to heavy rainfall, flash flooding developed quickly as an intense tropical rain band moved over the county. Several flooded creeks and small streams covered roads in the Brookdale section with several inches of water. Water also entered a few homes in this area. At one point, water was described as "hood deep" at the China Grove exit on interstate 85.

### NCZ049

#### Yancey

28

0030EST  
0400EST

0

0

Flood

Some minor flooding developed along several streams during the early morning hours.

### Cabarrus County

Countywide

28

0100EST  
0300EST

0

0

700K

Flash Flood

Flash flooding developed across the county shortly after midnight in response to an intense tropical rain band. Roads were damaged and water entered homes and businesses, particularly in the Harrisburg area.

### Rowan County

Salisbury to  
6 N Salisbury

28

0115EST  
0300EST

0

0

Flash Flood

Flash flooding eventually spread to the northern part of the county, where several small streams and roads flooded around Salisbury and points north. A mud slide blocked a street in the city.

### NCZ036>037

#### Iredell - Davie

28

0200EST  
1100EST

0

0

120K

Flood

An extended period of moderate to heavy rainfall resulted in gradual rises along creeks and streams, which culminated in minor flooding of a few roads and low areas across portions of the northwest piedmont.

### NCZ082

#### Union

28

0200EST  
1100EST

0

0

Flood

After earlier flash flooding, moderating rain rates led to more gradual rises along creeks and streams, but general flooding continued. Numerous small streams and low-lying areas remained flooded through late morning.

### NCZ057-072

#### Rowan - Cabarrus

28

0300EST  
1100EST

0

0

20K

Flood

Although moderating rainfall rates resulted in more gradual rises along creeks and streams, flooding expanded and became widespread later in the morning. By mid-morning, numerous roads were closed. A school in Cabarrus County was evacuated when it was threatened by rising water. In Rowan County, several motorists had to be rescued after driving their vehicles through flood water.

## NORTH DAKOTA, Central and West

### Mountrail County

7 N Palermo

09

1750CST

0

0

Hail (1.50)

### Ward County

5 N Kenmare

09

1805CST

0

0

Hail (0.75)

### Ward County

1 N Kenmare

09

1810CST  
1812CST

0

0

Hail (1.00)

## NORTH DAKOTA, East

### Cavalier County

5 W Hannah

03

2245CST

0

0

Hail (0.88)

### Benson County

5 NE Warwick

04

0345CST

0

0

Hail (0.75)

### Ramsey County

2 S Doyon

04

0355CST

0

0

Hail (0.75)

### Nelson County

7 WSW Lakota

04

0400CST

0

0

Hail (0.75)





## Storm Data and Unusual Weather Phenomena

[illegible]

**OHZ068**

17 1014EST  
18 0700EST

## Flood

**OHZ058**

17 1100EST  
22 0700EST

## Flood

**OHZ069**

17 1130EST  
20 0900EST

## Flood

**OHZ057**

17 1200EST  
1800EST

## Flood

## OHZ050

17 1315EST  
20 0100EST

## Flood

OHZ048

17 1425EST  
1800EST

## Flood

OHZ049

17 1445EST  
19 0400EST

## Flood

**OHZ041**

17	1500EST
18	0000EST

## Flood

At 4 PM EDT on 17th, mud slides and floods closed numerous roads near East Liverpool. 508 PM, Will Creek flooded Rte 518 near Summitville. 119 structures damaged or destroyed. Total rain: 7 inches in southeastern part of county. (IVAN)



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## OHIO, North OHZ033

### **Mahoning**

**08 1800EST** **0 0 250K** **Flood**  
**2200EST**

Heavy rains associated with the remnants of Tropical Storm Frances caused widespread urban and lowland flooding in Mahoning County. Between two and three inches of rain fell on much of the county by late evening. Dozens of roads in the county had to be closed because of flooding. Hundreds of homes in the county experienced basement or nuisance flooding. Flood waters in some areas were reported to be as much as two feet deep.

## **Trumbull County** Countywide

**08 2120EST** **0 0 4.2M** **Flash Flood**  
**09 0500EST**

Heavy rains associated with the remnants of Tropical Storm Frances caused extensive flooding in Trumbull County. The worst flooding was reported in the eastern and central sections of the county where up to four inches of rainfall had fallen by late evening on September 8th. The rains continued into the 9th with another two to four inches reported in some areas before the rain finally ended around daybreak. Rainfall totals from the event included: 3.36 inches at Mosquito Creek State Park; 3.60 inches at Newton Falls; 3.85 inches in Leavittsburg; 4.45 inches at the Youngstown-Warren Regional Airport in Vienna Township and 9.40 inches at Brookfield. The Cortland area was especially hard hit by flooding. Between 20 and 30 families had to be evacuated from their homes around 2:30 a.m. after flood waters from Walnut Run rose to nearly four feet in depth in their neighborhood. A total of 118 homes were damaged by flooding in Cortland. Several roads and culverts were also washed out in the area. Flood waters along Tournament Trail and Old Oak Drive exceeded the 100 year flood plain. Brookfield Township was also hard hit as several small streams went into flood washing out a couple roads and forcing the closure of several more. To the south, Little Yankee Creek and Mud Run Creek went into flood in Hubbard damaging many homes and businesses along Main Street. Many other roads were washed out or damaged elsewhere in the county. A total of 309 homes were directly damaged by flash flooding in Trumbull County. Hundreds of additional homes and businesses experienced basement or nuisance flooding.

## **Stark County** Southeast Portion

**08 2130EST** **0 0 1.2M** **Flash Flood**  
**09 0400EST**

For the second time in less than two weeks, heavy rains caused significant flooding in the southeastern corner of Stark County. Rain associated with the remnants of Tropical Storm Frances began early on September 8th and increased in intensity during the evening hours. The rain continued into the early morning hours of the 9th and finally ended an hour or two before daybreak. Storm total rainfall amounts included: 2.08 inches at North Lawrence, 2.32 inches at Genoa and 3.08 inches at Alliance. Similar to the August 28th flash flood event, heavy rains over Columbia County contributed to the severity of the flooding. Up to 9 inches of rain was reported over the headwaters of Sandy Creek in Columbia County. The creek rapidly rose during the late evening hours of the 8th and early morning of the 9th. Over 60 homes and business were heavily damaged in Minerva after the creek left it's banks. A couple dozen people had to be rescued or evacuated from their homes. The water treatment plant in Minerva sustained over \$100,000 in damages. Many roads in the southeast corner of the county were washed out or had to be closed because of flooding. Dozens of additional homes sustained damage from basement or nuisance flooding.

## **Mahoning County** Countywide

**08 2200EST** **0 0 1.8M** **Flash Flood**  
**09 0300EST**

Heavy rains associated with the remnants of Tropical Storm Frances caused flooding over portions of Mahoning County. Most of the flooding occurred in the eastern half of the county where rainfall totals were the greatest. The rain began early on the 8th and increased in intensity during the evening hours. The heavy rain continued into the 9th and finally ended just before daybreak. Rainfall totals from the event included: 3.56 inches at Sebring; 3.88 inches at Youngstown; 5.5 inches at Poland; 7.0 inches at Canfield and 9.25 inches near Poland. The Poland area was especially hard hit by flooding. A branch of Yellow Creek left it's banks and flooded much of the Cobbler's Run Subdivision along Dobbins Road. Several families had to be evacuated and at least two homes were destroyed when their basement walls collapsed. A library in Poland was also damaged. Extensive street and nuisance flooding was reported in both Beaver and Springfield Townships and also in Campbell and Boardman. Flood waters on some roads were reported to be as much as three feet deep. Occupants of three vehicles had to be rescued from their stranded cars. Two roads were washed out in the southeastern corner of the county. Hundreds of homes in Mahoning County were damaged, mainly by basement and nuisance flooding.

## **Ashtabula County** Countywide

**08 2300EST** **0 0 800K** **Flash Flood**  
**09 0400EST**

Heavy rains associated with the remnants of Tropical Storm Frances caused flooding over portions of Ashtabula County. Rain began early on September 8th and increased in intensity during the evening hours. The heavy rain continued into the 9th and finally ended just before daybreak. Rainfall totals from the event included: 2.08 inches at Ashtabula; 2.42 inches at Geneva; 2.88 inches at Jefferson; 3.00 inches at New Lyme; 3.68 inches at Conneaut and 4.66 inches at Pierpont. Significant flooding occurred along Conneaut Creek in the northeastern corner of the county. Very heavy rain fell over the headwaters of the creek in Pennsylvania and caused a rapid rise in creek levels beginning around midnight. By 12:24 a.m., a campground along Creek Road in Kingsville Township was under as much as five feet of water. 17 campers at the campground barely escaped the rapidly rising waters and had to be rescued by boat. Several roads near the creek were washed out by the flood waters. Many other roads, including State Route 7 had to be closed because of flooding. Over a dozen vehicles were damaged at an automobile dealership by flood waters up to four feet deep. Hundreds of homes and businesses were damaged by flooding. Several of these sustained significant damage.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## OHIO, North

**OHZ012>014-022>023- Lake - Geauga - Ashtabula - Portage - Trumbull - Stark - Mahoning  
032>033**

<b>09</b>	<b>0200EST 1700EST</b>	<b>0</b>	<b>0</b>	<b>525K</b>	<b>Strong Wind</b>
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The remnants of Tropical Storm Frances moved northeast across the upper Ohio Valley on September 8th. Gusty northerly winds behind this storm caused considerable damage in northeastern Ohio. Hundreds of trees were downed in Ashtabula, Trumbull, Mahoning, Portage, Lake, Geauga and Stark Counties. Trumbull County was especially hard hit with at least five homes damaged in the Cortland area by fallen trees. Roads were blocked by trees in both Niles and Liberty Township. In Stark County, a tree hit a moving car around 4:30 p.m. The driver sustained only minor injuries, but the car was heavily damaged. In Mahoning County, a fallen tree destroyed a garage in Milton Township. A pier at an Eastlake marina (Lake County) was destroyed by high winds and waves.

## **OHZ033**

### **Mahoning**

<b>09</b>	<b>0300EST</b>	<b>0</b>	<b>0</b>	<b>500K</b>	<b>Flood</b>
<b>10</b>	<b>2000EST</b>				

Runoff from heavy rains produced by the remnants of Tropical Storm Frances caused the Mahoning River to go into flood. At Youngstown, the river went above the flood stage of 10 feet during the late evening hours of September 8th. The river crested at 14.35 feet during the evening of the 9th and fell below flood stage during the evening of the 10th. Extensive flooding occurred in low areas along the river. Several roads were damaged in Mill Creek Park. Buildings along the river in Youngstown also sustained some damage. Many roads along the river had to be closed because of the flooding.

## **OHZ032**

### **Stark**

<b>09</b>	<b>0400EST 1800EST</b>	<b>0</b>	<b>0</b>	<b>300K</b>	<b>Flood</b>
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Heavy rains from the remnants of Tropical Storm Frances caused Nimishillen Creek to go into flood during the early morning hours of September 9th. The creek at North Industry crested at 8.98 feet during the early afternoon hours and fell back below the flood stage of 8.0 feet by early evening. Many homes and businesses along the creek experienced flooding. Damage to most of these buildings was minor, but a few did sustain significant damage. Several roads along the creek had to be briefly closed.

## **OHZ023**

### **Trumbull**

<b>09</b>	<b>0500EST</b>	<b>0</b>	<b>0</b>	<b>250K</b>	<b>Flood</b>
<b>10</b>	<b>0900EST</b>				

Runoff from rains from the remnants of Tropical Storm Frances caused widespread lowland and nuisance flooding across Trumbull County. The Mahoning River at Leavittsburg went above the flood stage of 10 feet during the afternoon hours of the 9th. The river crested at 10.91 feet at 11 p.m. and fell back below flood stage around 9 a.m. on the 10th. Homes along the river experienced minor flooding problems. Several roads in the county remained closed through the 10th.

## **OHZ023-033**

### **Trumbull - Mahoning**

<b>17</b>	<b>1115EST</b>	<b>0</b>	<b>0</b>	<b>825K</b>	<b>Flood</b>
<b>19</b>	<b>1000EST</b>				

For the second time in a week, extensive urban and lowland flooding was reported across Trumbull and Mahoning Counties. The remnants of Ivan moved across the Ohio Valley on September 17th. A stationary front extending northeast from the low caused heavy rains to develop and fall on most of northeastern Ohio from late on September 16th through the 17th. Rainfall totals for the storm in Trumbull County included: 2.00 inches at Mesopotamia; 2.87 inches at Newton Falls and 3.64 inches at Brookfield. In Mahoning County totals included: 2.80 inches at Canfield; 3.66 inches at East Lewistown and 3.90 inches at Craig Beach. Runoff from this rain caused many rivers and streams to leave their banks flooding many low lying areas. Several roads had to be closed because of the flooding. At Youngstown, the Mahoning River went above the 10 foot flood stage during the afternoon hours of the 17th. The river crested at 14.26 feet at 9 p.m. and fell out of flood late in the morning of September 19th. At Leavittsburg, the Mahoning River went above the 10 foot flood stage during the evening of the 17th and crested at 11.62 feet just before daybreak on the 18th. The river went out of flood early on September 19th. Hundreds of homes in both Mahoning and Trumbull Counties sustained damages from either lowland or basement flooding.

**OHZ011-020>021-031- Cuyahoga - Medina - Summit - Wayne - Holmes  
038**

<b>17</b>	<b>1200EST 1900EST</b>	<b>0</b>	<b>0</b>	<b>360K</b>	<b>Flood</b>
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The remnants of Ivan moved across the Ohio Valley on September 17th. A stationary front extending northeast from the low caused heavy rains to develop and fall on most of northeastern Ohio from late on September 16th through the 17th. Rainfall totals for the storm included: 1.76 inches at Millersburg (Holmes County); 1.84 inches at Wooster (Wayne County); 2.50 inches at Cuyahoga Heights (Cuyahoga County); 2.91 inches at Macedonia (Summit County) and 3.84 inches at Wadsworth (Medina County). Runoff from this rain caused several streams and creeks to leave their banks flooding many low lying areas. A few roads had to be closed because of flooding. Hundreds of homes sustained minor damage from either basement or lowland flooding.

## OHIO, Northwest

**Allen County  
Spencerville**

<b>03</b>	<b>2105EST</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>04</b>	<b>0100EST</b>				

Several county and state roads reported closed due to flash flooding. A foot of water reported flowing over roads.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## OHIO, Northwest

### Van Wert County

Elgin

03 2105EST

0

0

0

Flash Flood

04 0100EST

County and State roads closed due to flash flooding. At least a foot of flowing water over roads in southeast Van Wert county.

## OHIO, Southeast

### Jackson County

3 W Jackson to

6 W Jackson

04 1800EST

0

0

Funnel Cloud

1815EST

Slow moving showers produced a rope like funnel cloud west of the city.

**OHZ066>067-075>076- Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence**

**083>087**

08 1200EST

0

0

3.5M

Flood

09 2200EST

The low pressure remains of Hurricane Frances caused about a 30 hour rain event, from the afternoon of the 7th, into the evening hours of the 8th. A stalled frontal boundary helped trigger heavier convection on the northern, or leading edge, of the rain shield during the late afternoon and evening of the 7th. This initial convection caused the heavier storm totals to be over Morgan and Perry Counties, compared to points further south.

Storm totals of 4 to 7 inches were common, with isolated amounts both above and below those totals. Some specific preliminary totals include New Lexington with 7.5 inches, McConnelsville 6.6 inches, McArthur 6.3 inches, Salem Center 5.7 inches, Athens 5.5 inches, Gallipolis 5.1 inches, Carpenter 5.0 inches, South Point 4.7 inches, Newport and Nelsonville 4.6 inches, and finally Marietta 3.8 inches.

The Scalia Lab on the Ohio University campus in Athens reported a storm total of 5.3 inches. Other rain totals from spotters included 5.9 inches at Pageville of Meigs County, 5.7 inches from Darwin of Meigs County and Guysville of Athens County. Tupper's Plain of Meigs County measured 5.4 inches. A few automated gauges totaled 5.1 inches at Coolville, 4.9 inches at Kitts Hill, and 4.8 inches at Amesville.

Since the ground was dry prior to this event, most flooding was to roads and low lying areas. In Athens County, Sunday Creek surrounded buildings in Trimble and blocked streets. Some residents evacuated their homes as a precaution. Flooding remained minor. The gauge at Gloucester crested at 16.4 feet on the 9th, well below the 19 foot crest observed back in May, 2004.

However, flooding was more severe in Perry, Morgan, and Washington Counties, affecting some homes. In Perry County, around 50 homes had major damage, with 3 homes destroyed. Duck Creek flooded in Washington County, including around Elba and Lower Salem. In Washington County, one house was destroyed, while 7 homes had major damage. In Morgan County, 8 homes had major damage.

The Muskingum River crested at 11.7 feet early on the 9th at McConnelsville in Morgan County. Flood stage is 11 feet. The Shade river near Chester of Meigs County rose from 4.7 feet around 0500E on the 8th, to 21.5 feet around 1830E on the 9th. Bankfull is around 17 feet.

This event set the stage for a more widespread flood across southeast Ohio, to follow later in the month.

**OHZ066>067-075>076- Perry - Morgan - Athens - Washington - Vinton - Meigs - Gallia - Lawrence**

**084>087**

17 0815EST

0

0

25.5M

Flood

21 1700EST

Light rain spread north into southeast Ohio during the afternoon and evening hours of the 16th. The heavier rain from the remnants of Hurricane Ivan developed over Lawrence County before dawn on Friday the 17th, reaching the Athens and Marietta vicinity by 0900E on the 17th. By 1700E the heavy rain was pulling east and northeast, out of southeast Ohio. A rain event of 24 to 30 hours dumped 4 to 6.5 inches of rain. Some specific preliminary totals included Beverly 6.4 inches, McArthur 6 inches, McConnelsville 5.5 inches, Athens and Waterloo 5.1 inches, Marietta and Newport 4.8 inches, Gallipolis 4.3 inches, and Nelsonville 4 inches. Rains were not as heavy over central and northern portions of Perry County. New Lexington measured 2.4 inches. Spotters reported 6.2 inches from Guysville, 6.1 inches at Tupper's Plains, and 5.5 inches in Pageville.

Since the ground was still recovering from the effects of Hurricane Frances 8 days earlier, streams crested higher in many instances. The small stream flooding developed during the late morning and early afternoon period of the 17th. Serious small stream flooding occurred on such streams as Sunday Creek, Duck Creek, Racoon Creek, Little Racoon Creek, and Symmes Creek. On the 2 year old gauge at Bolins Mills on Racoon Creek, the crest was 17 feet, its highest. At Millfield on Sunday Creek, a crest of 24.5 feet established a new record. However, the upper reaches of Sunday Creek in Perry and northern Athens County were higher in May of 2004, than this event. For example, the gauge at Gloucester crested at 17.6 feet compared to 19 feet in May. Symmes Creek near Aid crested at 23.3 feet.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## OHIO, Southeast

The smaller rivers, such as the Little Muskingum and Shade, saw serious flooding. The Little Muskingum River at Bloomfield crested at 31.1 feet, surpassing the 30.7 feet crest in 1998. The Rinard covered bridge, originally built in 1874, was shoved into the river. During a restoration project in the early 1990s, gaps between the wooden boards were taken out. Local residents think, without those gaps, the water pressure was greater, knocking the bridge off its supports. In this vicinity, general stores in Bloomfield and Wingett Run were flooded with 5 feet of water. The Shade River crested at 30 feet near Chester. The 1997 crest was at 31.4 feet.

The Hocking River at Athens crested slightly over its 20 foot flood stage at 20.8 feet. The crest occurred before dawn on the 18th at Athens.

The axis of heaviest rain ran up the main stem of the Ohio River toward Wheeling and Pittsburgh. Storm totals of 6 to 8 inches were seen there. This rain was almost direct local runoff into the upper Ohio River. As a result, a strong rise of 1 to 2 feet per hour was observed on the Ohio River during the Friday evening, the 17th. For example, between 1600E and 2100E, the Ohio River rose 9 feet at Willow Island Lock and Dam, and around 10 feet on the Marietta 2SW gauge. The 24 hour rise at Marietta was 22 feet in 24 hours, the greatest 24 hour rise there on record.

On the 18th and 19th, as most small streams were receding, moderate to major flooding occurred on the Ohio River from New Matamoras and Willow Island on down through Marietta, Belpre, Racine and Pomeroy. It was the highest stage since March 1964. The crest then dampened to minor flooding below the mouth of the Kanawha River. Some specific crests included Willow Island 44.8 feet, Marietta 2SW 42.4 feet, Belleville 45.8 feet, Racine 50.2 feet, Pomeroy 51.2 feet, and R C Bryd Lock and Dam 51 feet. The crest was 2 to 4 feet deep inside hundreds of Marietta businesses, plus on the order of 40 businesses in Meigs County including the town of Pomeroy.

In Washington County, the Red Cross surveyed 159 homes with major damage, with 60 homes destroyed. Two trailer parks were hit hard by flooding around Marietta. On the order of 400 to 500 businesses in the county were affected. State damage assessments had 56 homes with major damage in Athens County. In Meigs County, 16 homes had major damage and 1 house was destroyed. In Gallia County, 6 homes had major damage with 1 home destroyed. In Lawrence County, 8 homes had major damage and 3 were destroyed. In Vinton County, 5 homes had major damage and 2 homes were destroyed.

The FEMA disaster 1556 included this flood event.

## OHIO, Southwest

### OHZ065-074

#### **Fairfield - Hocking**

<b>08</b>	<b>1530EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
	<b>1830EST</b>			

The remnants of Hurricane Frances brought heavy rains to portions of central Ohio. Areas southeast of Columbus received three to four inches of rain, causing some minor flooding problems. Numerous roads were flooded across Fairfield and Hocking counties, with a few roads closed near Lancaster. Several creeks rose out of their banks across Hocking County.

#### **Scioto County Countywide**

<b>17</b>	<b>0900EST</b>	<b>0</b>	<b>0</b>	<b>5K</b>	<b>Flash Flood</b>
	<b>1400EST</b>				

Twenty roads were closed due to high water across the county. Basements were flooded in several homes, and one evacuation took place.

### OHZ074

#### **Hocking**

<b>17</b>	<b>1200EST</b>	<b>0</b>	<b>0</b>	<b>Flood</b>
	<b>1500EST</b>			

The remnants of Hurricane Ivan brought persistent heavy rains to southern and central Ohio. Three to five inches of rain fell across Hocking County, causing flooding on several roads in the eastern part of the county. A number of the roads were closed because of the flooding.

#### **Pike County Beaver**

<b>17</b>	<b>1200EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
	<b>1400EST</b>			

Several roads were flooded and closed.

## OKLAHOMA, Eastern

NONE REPORTED.

## OKLAHOMA, Extreme Southeast

NONE REPORTED.

## OKLAHOMA, Panhandle

### **Cimarron County**

<b>3 SSE Boise City</b>	<b>21</b>	<b>2015CST</b>	<b>0</b>	<b>0</b>	<b>Thunderstorm Wind (G70)</b>
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A thunderstorm became severe over the western Oklahoma panhandle during the evening hours producing a brief high wind gust at

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## OKLAHOMA, Panhandle

the Boise City Oklahoma MesoNet. No damage or injuries were reported.

## OKLAHOMA, Western, Central and Southeast

### Payne County

2 S Cushing 16 0500CST 0 0 10K Lightning

Lightning struck a crude oil storage tank causing a fire. The 80,000 barrel capacity tank only had 8700 barrels of crude in the tank at the time.

## OREGON, Central and East

### Grant County

1 N Granite 01 1509PST 0 0 Hail (0.75)

### Union County

La Grande 01 1545PST 0 0 Lightning

Lightning from a thunderstorm hit a home, which tripped circuit breakers, knocked out some outlets, and left a burn mark on the house.

### Wallowa County

5 S Imnaha 01 1650PST 0 0 Hail (0.75)

### Wallowa County

20 ESE Enterprise 01 1715PST 0 0 Thunderstorm Wind (G50)

High winds from a thunderstorm knocked down large trees near the confluence of north/south forks of the Imnaha River.

### Wallowa County

20 ESE Enterprise 01 1715PST 0 0 Hail (0.75)

### ORZ047

John Day Basin  
17 1504PST 0 0 High Wind (G52)

A peak wind gust of 60 MPH was measured at the John Day Airport.

## OREGON, Northwest

NONE REPORTED.

## OREGON, Southeast

NONE REPORTED.

## OREGON, Southwest

ORZ021>022-024-026 South Central Oregon Coast - Curry County Coast - Eastern Curry County & Josephine County - Jackson County

03 1315PST 0 0 Wildfire  
04 0500PST

See below.

A Red Flag Warning was issued for Oregon fire weather zones 618/691/620 for expected strong winds and poor recoveries, effective at the above listed time interval. The winds did blow, but recoveries were much better than expected, so the warning did not verify.

### ORZ029>031

Klamath Basin - Northern & Eastern Klamath County & Western Lake County - Central & Eastern Lake County

20 2030PST 0 0 Frost/Freeze  
21 0800PST

See below.

A Freeze Warning was issued for the above listed zones, effective at the above listed times. Reported low temperatures in the area ranged from 20 to 28 degrees, so the warning verified well.

## PACIFIC

NOT RECEIVED.

## PENNSYLVANIA, Central

### Fulton County

12.5 W Mc Connellsburg 08 1657EST 0 0 Thunderstorm Wind (G50)

Trees and wires were knocked down by thunderstorm winds near Crystal Spring.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, Central**

**PAZ004>005-011>012-017>019-024>026-034>035-037-041-045>046** **Warren - McKean - Cameron - Northern Clinton - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Bedford - Fulton - Tioga - Northern Lycoming - Southern Clinton - Southern Lycoming**

**08 2045EST 0 0 Flood**  
**10 0300EST**

The remnants of Hurricane Frances moved northeast across central Pennsylvania from late Thursday afternoon on September 8th, into the early morning hours of Friday, September 9th, producing widespread heavy rainfall, and subsequent minor to moderate flooding. Rainfall amounts of 3 to 5 inches within a 12 to 18 hour period led to numerous road closures and widespread basement flooding across central Pennsylvania, particularly in Blair and Huntingdon Counties. In Blair County, a railroad bridge in Hollidaysburg Borough was damaged by flood waters, while approximately 200 persons were evacuated due to flooded homes. In Huntingdon County, Juniata College evacuated 23 persons from a dormitory due to flooding, while in Logan Township, 35 calves were swept away by flood waters from a farm.

## **Somerset County Central City**

**08 2100EST 0 0 Flash Flood**  
**09 0000EST**

Thunderstorms produced torrential rain across Somerset County, leading to Flash Flooding in Central City. US Route 30 was closed in several places due to flooding and debris over the roadway. Several secondary roads were also closed in the vicinity of Central City and Meyersdale.

## **PAZ026**

**Huntingdon**  
**09 0100EST 0 0 Flood**  
**1400EST**

Heavy rain caused flooding along the Little Juniata River at Spruce Creek. The creek rose above flood stage of 8.0 feet at 01:00 EST on the 9th, crested at 12.94 feet at 5:45 EST on the 9th, then fell back below flood stage at 14:00 EST on the 9th.

## **PAZ025**

**Blair**  
**09 0100EST 0 0 Flood**  
**2200EST**

Heavy rain caused flooding along the Frankstown Branch of the Juniata River at Williamsburg. The river rose above flood stage of 12.0 feet at 1:00 EST on the 9th, crested at 16.91 feet at 10:00 EST on the 9th, then fell back below flood stage at 22:00 EST on the 9th.

## **PAZ026**

**Huntingdon**  
**09 0715EST 0 0 Flood**  
**2015EST**

Heavy rain caused flooding along the Juniata River at Huntingdon. The river rose above flood stage of 12.0 feet at 7:15 EST on the 9th, crested at 13.45 feet at 11:45 EST on the 9th, then fell back below flood stage at 20:15 EST on the 9th.

## **PAZ045**

**Southern Clinton**  
**09 0900EST 0 0 Flood**  
**2230EST**

Heavy rain caused flooding along the Bald Eagle Creek at Beech Creek Station. The creek rose above flood stage of 11.0 feet at 09:00 EST on the 9th, crested at 12.68 feet at 14:45 EST on the 9th, then fell back below flood stage at 22:30 EST on the 9th.

## **PAZ034**

**Bedford**  
**09 1100EST 0 0 Flood**  
**1400EST**

Heavy rain caused flooding of Raystown Branch of the Juniata River at Saxton. The river rose above flood stage of 17.0 feet at 11:00 EST on the 9th, crested at 17.15 feet at 12:30 EST on the 9th, then fell back below flood stage at 14:00 EST on the 9th.

## **PAZ010**

**Elk**  
**09 1100EST 0 0 Flood**  
**1400EST**

Heavy rain caused the Clarion River at Johnsonburg to rise above its flood stage of 7 feet at 11:00 EST on the 9th, crest at 7.23 feet on the 9th shortly after 11:00 EST and fell below flood stage at 14:00 EST on the 9th.

## **PAZ026**

**Huntingdon**  
**09 1130EST 0 0 Flood**  
**1945EST**

Heavy rain caused flooding of the Aughwick Creek at Shirleysburg. The river rose above flood stage of 10 feet at 11:30 EST on the 9th, crested at 10.79 feet at 16:45 EST on the 9th and then fell back below flood stage at 19:45 EST on the 9th.

## **PAZ046**

**Southern Lycoming**  
**10 0800EST 0 0 Flood**  
**11 0000EST**

Heavy rain caused the West Branch of the Susquehanna River at Montgomery to exceed its flood stage of 17 feet. The river rose above flood stage at 08:00 EST on the 10th, crested at 18.6 feet at 11:00 on the 10th and fell below flood stage at 00:00 EST on the 11th.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, Central**

### **Warren County**

Sheffield

17 1400EST 0 0 Flash Flood  
1926EST

Heavy rain caused rapid rises along Tionesta Creek in southeast Warren County. Several homes were quickly surrounded by flood waters during the mid afternoon hours. The flooding prevented several school students from returning home, since their homes were inaccessible due to flood waters. Flood waters quickly receded during the early evening hours.

PAZ004>006-010>012-017>019-024>028-033>037-041>042-045>046-049>053-056>059-063>066

**Warren - McKean - Potter - Elk - Cameron - Northern Clinton - Clearfield - Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin - Tioga - Northern Lycoming - Sullivan - Southern Clinton - Southern Lycoming - Union - Snyder - Montour - Northumberland - Columbia - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster**

17 1500EST 2 0 50M Flood  
19 2000EST

The remnants of Hurricane Ivan moved north along the Appalachians during Friday, September 17th, and interacted with an approaching cold front, leading to a large swath of excessive rainfall across central Pennsylvania as the system weakened to a tropical depression. The rain began during Friday morning, and then became very heavy from Friday afternoon into Friday evening. Rainfall amounts of 3 to 6 inches were common, with some localized amounts exceeding 8 inches within a 12 hour period. The heavy rainfall finally tapered off from west to east across central Pennsylvania late Friday night.

As a result of this excessive rainfall, and antecedent heavy rainfall from the remnants of Hurricane Frances one week earlier, widespread flooding occurred throughout central Pennsylvania from Friday evening through early Monday, September 20th. Many smaller creeks and streams overflowed their banks by Friday evening, while many larger tributaries of the Susquehanna River experienced moderate to major flooding from Saturday into Sunday. In fact, flood levels at many locations reached into the top 5 of all flood events, with many river forecast points cresting above levels reached in the January 1996 flood. Overall, 32 of 47 river forecast points exceeded flood stage in central Pennsylvania, with 2 points setting all-time record high water marks, as Bald Eagle Creek at Beech Creek Station reached 15.96 feet, and the Frankstown Branch of the Juniata River reached 19.46 feet.

The widespread flooding closed hundreds of roads and bridges across central Pennsylvania, causing a significant adverse impact on commerce and transportation for several days. In particular, Route 322 through the "narrows" section of Juniata and Mifflin Counties was closed, in addition to numerous smaller roadways. The high water also caused the weakening of several flood control structures in Cambria, Huntingdon, and Montour Counties, leading to evacuations. In addition, two deaths were attributed to the flooding. One death occurred in Greenfield Township in Blair County, where a 2.5 year old boy was swept away from waters of Popular Run Creek, as the family was cleaning up storm damage and the child wandered off to the creek and was swept away. The death occurred between 12:30 PM and 1:00 PM EST on Saturday September 18th. The second death occurred in Mifflin County to a 59 year old male, who was found within receding waters. Preliminary monetary estimates of flood damage from the remnants of Ivan across the state were over 50 million dollars.

M2IW, M59IW

### **Fulton County**

17 SW Mc Connellsburg 17 1630EST 0.5 40 0 0 Tornado (F1)  
1632EST

A survey team from the National Weather Service confirmed a tornado in Fulton County Pennsylvania from the storms of September 17 2004. The tornado occurred 3.5 miles east of McKees Gap along route 731 (McKees Gap Road). Wind speeds were estimated to be around 75 mph.

The tornado touched about one quarter mile south of McKees Gap Road downing several trees, damaging the roof of a house, damaging part of a barn and leveling a tractor barn. The tornado also flattened tall grass and corn. The tornado traveled toward the north-northwest for about half a mile. It toppled and uprooted trees as it crossed McKees Gap Road before lifting up. The width of the tornado was about 30 to 40 yards and damage could be followed for about half a mile.

The tornado touched down at approximately 530 pm EDT and was on the ground for about 1 to 2 minutes. The tornado was a weak F1 tornado on the Fujita scale. There were no injuries or deaths.

PAZ037

### **Tioga**

17 1730EST 0 0 Flood  
18 1245EST

Heavy rain caused the Tioga River at Mansfield to exceed its flood stage of 9 feet. The river rose above flood stage at 17:30 EST on the 17th, crested at 14.21 feet at 04:30 EST on the 18th, and fell below flood stage at 12:45 EST on the 18th.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, Central**

### **Franklin County**

2 SW Greencastle

17 1814EST 2 30 0 0 Tornado (F1)  
1918EST

A survey team from the National Weather Service confirmed a tornado in Franklin County.

The tornado occurred near the town of Greencastle and was rated an F1 on the Fujita scale. Wind speeds were estimated to be near 80 mph. The tornado first hit the ground about 2 miles to the southwest of Greencastle and moved to the north-northwest for about 2 miles. The width of the storm was approximately 30 yards. The tornado touched down at approximately 714 pm EDT and lifted at approximately 718 pm EDT. The tornado caused many trees to fall and damaged several structures. There were no injuries or deaths.

### **Franklin County**

3 SW St Thomas

17 1828EST 2.5 50 0 0 Tornado (F1)  
1832EST

A survey team from the National Weather Service confirmed a tornado in Franklin County.

The tornado occurred near the town of Saint Thomas and was rated an F1 on the Fujita scale. Top wind speeds were estimated at about 85 mph. The path was 2.5 miles long and began 3 miles south-southwest of Saint Thomas. The width of this tornado was 30 yards. The tornado touched down approximately at 728 pm EDT and lifted at 732 pm EDT. This tornado caused many trees to fall and damaged several structures.

PAZ018>019-024>028-033>036

**Northern Centre - Southern Centre - Cambria - Blair - Huntingdon - Mifflin - Juniata - Somerset - Bedford - Fulton - Franklin**

17 1900EST 0 0 49.9K Strong Wind  
18 0100EST

Strong winds associated with the remnants of Hurricane Ivan, combined with excessively wet soil resulted in the downing of hundreds of trees across portions of south central Pennsylvania during Friday evening on September 17th. Although the system weakened to a tropical depression upon reaching Pennsylvania, with estimated winds between 35 and 45 mph, the extremely wet soil from recent heavy rainfall, in addition to water-loaded foliage likely led to this blow-down phenomenon. Areas that were particularly hit hard included exposed eastern slopes within the ridges of central Pennsylvania, and also in valley locations near the foot of these ridges. Such areas included the east facing ridges within Blue Knob State Park, with an estimated 800 acres affected, mainly between 1800 and 2000 EST, the eastern slopes within Rothrock State Forest, and the valley at Tussey Mountain. Fallen trees resulted in some structural damage in Huntingdon County where a camper was destroyed at Camp Blue Diamond, and a hunting cottage was damaged about 13 miles south of Camp Blue Diamond. Most of the trees that fell were aligned from northeast to southwest, indicative of the strong sustained straight line winds that occurred during this event.

### **Franklin County**

9 E Chambersburg

17 1918EST 1.5 100 0 0 Tornado (F1)  
1920EST

A survey team from the National Weather Service confirmed that a tornado occurred in Caledonia State Park in easternmost Franklin County Pennsylvania.

The tornado began less than a mile south of the park and then moved northward across Route 30 and through the park, toppling numerous trees in its path. The tornado was about one and one-half miles in length with a width of 50 to 100 yards and a top wind speed estimated around 85 mph. The tornado was rated as an F1 on the Fujita scale. The tornado touched down about 818 pm EDT and lasted a couple of minutes. There were no injuries or deaths.

### **Bedford County**

3 NW Everett

17 1930EST 3.5 100 0 0 Tornado (F1)  
1935EST

A survey team from the National Weather Service confirmed a tornado in Bedford County.

The tornado occurred north of the town of Everett and was rated an F1 on the Fujita scale. Wind speeds were estimated to be around 80 mph. The tornado first touched down 3 miles northwest of the town of Everett on Lower Snake Spring Road. The tornado traveled north along Snake Spring Road for three and one half miles before lifting up. The width of the tornado was 50 to 100 yards.

The tornado touched down at approximately 830 pm EDT and lifted at approximately 835 pm EDT. The tornado caused many trees to fall, and damaged one house and several farm buildings. Extensive damage was done to corn crops on six different farms.

There were no injuries or deaths.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, Central**

### **Bedford County**

2.5 NE Bedford

17    **1940EST**            **2.3**    **50**            **0**    **0**            **Tornado (F1)**  
                                  **1944EST**

A survey of the area near Imlertown and Yount revealed a tornado struck the region around 840 pm EDT.

The damage and snapped trees near Yount suggest a weak F1 tornado on the Fujita scale. The tornado touched down south of Yount along Station Road. The tornado moved northwest causing sporadic damage along Younts Road and Briar Valley Road. The main damage was snapped and uprooted trees suggesting winds of 70 to 75 mph. On Briars Valley Road, the tornado lifted off a barn roof. It also uprooted and snapped trees as it moved up the hill from the farm. The tornado had about a two and one quarter mile long path that was about 50 yards wide.

There were no injuries or deaths.

### **Cumberland County**

Oakville

17    **1955EST**            **2**        **50**            **0**    **0**            **Tornado (F1)**  
                                  **1958EST**

A survey team from the National Weather Service confirmed a tornado in Cumberland County.

The tornado occurred near the town of Oakville and was rated an F1 on the Fujita scale. Wind speeds were estimated to be near 90 mph. The tornado first touched down 1 mile south of Oakville, and moved north for about 2 miles before lifting up. The width of the tornado was about 50 yards.

The tornado touched down at approximately 855 pm EDT and lifted at approximately 858 pm EDT. The tornado caused many trees to fall, and damaged several farm houses and farm buildings.

There were no injuries or deaths.

### **Juniata County**

3 NW Mifflintown

17    **2005EST**            **1**        **75**            **0**    **0**            **Tornado (F1)**  
                                  **2007EST**

A survey team from the National Weather Service confirmed a tornado in Juniata County.

A tornado touched down near the town of Denholm and was likely influenced by the steep terrain of the area. The damage, in the form of downed trees, could be easily seen from Route 333. About 100 trees were knocked down with this tornado. The path was approximately 1 mile long and about 75 yards wide. The tornado occurred around 905 pm EDT and lifted at 907 pm EDT. This tornado was rated F1 on the Fujita scale with winds approaching 85 mph.

There were no known injuries or deaths.

### **Juniata County**

3 N Mifflintown

17    **2010EST**            **4.5**    **100**            **0**    **0**            **Tornado (F1)**  
                                  **2013EST**

A survey team from the National Weather Service confirmed a tornado in Juniata County.

A tornado touched down near the town of Arch Rock. It downed trees which were visible along Township Road 527. The length of the tornado was approximately 4.5 miles and the width was about 100 yards. In addition to the tornado, downburst winds were also observed in a much wider swath. Damage was mainly confined to trees being knocked down, however several structures had minor damage and several corn fields were flattened. The tornado touched down at approximately 910 pm EDT and lasted until approximately 913 pm EDT. The tornado was rated F1 on the Fujita scale with winds estimated at 85 mph.

There were no known injuries or deaths.

### **PAZ026**

#### **Huntingdon**

17    **2015EST**    **0**    **0**            **Flood**  
 18    **2045EST**

Heavy rain caused the Little Juniata River at Spruce Creek to exceed its flood stage of 8 feet. The river rose above flood stage at 20:15 EST on the 17th, crested at 15.46 feet at 04:45 EST on the 18th, and fell below flood stage at 20:45 EST on the 18th.

### **PAZ037**

#### **Tioga**

17    **2015EST**    **0**    **0**            **Flood**  
                                  **2215EST**

Heavy rain caused the Tioga River at Tioga Junction to exceed its flood stage of 15 feet. The river rose above flood stage at 20:15 EST on the 17th, crested at 15.33 at 21:30 EST on the 17th, and fell below flood stage at 22:15 EST on the 17th.

### **PAZ045**

#### **Southern Clinton**

17    **2045EST**    **0**    **0**            **Flood**  
 19    **1145EST**

Heavy rain caused the Bald Eagle Creek at Beech Creek Station to exceed its flood stage of 11 feet. The river rose above flood stage at 20:45 EST on the 17th, crested at 15.96 feet at 11:45 EST on the 18th, and fell below flood stage at 11:45 EST on the 19th.



## Storm Data and Unusual Weather Phenomena

[illegible]

**PENNSYLVANIA, Central**

Heavy rain caused the West Branch of the Susquehanna River at Milton to rise above its flood stage of 19 feet. The river rose above flood stage at 08:45 EST on the 18th, crested at 27.94 feet at 06:00 EST on the 19th, and fell below flood stage at 11:30 EST on the 20th.



# Storm Data and Unusual Weather Phenomena

September 2004

									September 2004
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>PENNSYLVANIA, Central</u></b>									
<b>PAZ056</b>	<b>Perry</b>								
	<b>18</b>	<b>2230EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>19</b>	<b>1600EST</b>							
Heavy rain caused the Juniata River at Newport to exceed its flood stage of 22 feet. The river rose above flood stage at 22:30 EST on the 18th, crested at 23.58 feet at 06:30 EST on the 19th, and fell below flood stage at 16:00 EST on the 19th.									
<b>PAZ045</b>	<b>Southern Clinton</b>								
	<b>28</b>	<b>0230EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		<b>0700EST</b>							
Heavy rain caused the Bald Eagle Creek at Beech Creek Station to exceed its flood stage of 11 feet. The creek rose above flood stage at 02:30 EST on the 28th, crested at 11.6 feet at 07:00 EST on the 28th and fell back below flood stage just after 07:00 EST on the 28th.									
<b>PAZ035&gt;036-056&gt;059-063&gt;066</b>	<b>Fulton - Franklin - Perry - Dauphin - Schuylkill - Lebanon - Cumberland - Adams - York - Lancaster</b>								
	<b>28</b>	<b>1200EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>29</b>	<b>0700EST</b>							
The remnants of Hurricane Jeanne moved northeast along the east slopes of the Appalachians during Tuesday, September 28th, eventually moving off the mid Atlantic Coast by early Tuesday evening. However, a large plume of tropical moisture to the northwest of the system produced widespread heavy rainfall across south central Pennsylvania during Tuesday, with rainfall amounts of 2 to 4 inches. This rainfall, combined with excessively wet soil and swollen rivers from the remnants of 2 antecedent tropical systems, produced mainly minor flooding across portions of south central Pennsylvania, with several road closures and some basement flooding reported.									
<b>PAZ059</b>	<b>Lebanon</b>								
	<b>28</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>29</b>	<b>1315EST</b>							
Heavy rain caused the Swatara Creek at Harper Tavern to exceed its flood stage of 9 feet. The river rose above flood stage at 21:00 EST on the 28th, crested at 10.09 feet at 05:00 EST on the 29th, and fell below flood stage at 13:15 EST on the 29th.									
<b>PAZ063</b>	<b>Cumberland</b>								
	<b>28</b>	<b>2145EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>29</b>	<b>0530EST</b>							
Heavy rain caused the Yellow Breeches Creek at Camp Hill to exceed its flood stage of 7 feet. The creek rose above flood stage at 21:45 EST on the 28th, crested at 7.52 feet at 01:15 EST on the 29th and fell below flood stage at 05:30 EST on the 29th.									
<b>PAZ063</b>	<b>Cumberland</b>								
	<b>29</b>	<b>0430EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>30</b>	<b>1130EST</b>							
Heavy rain caused the Conodoguinet Creek at Hogestown to exceed its flood stage of 8 feet. The river rose above flood stage at 04:30 EST on the 29th, crested 8.73 feet at 00:00 EST on the 30th and fell below flood stage at 11:30 EST on the 30th.									
<b>PAZ057</b>	<b>Dauphin</b>								
	<b>29</b>	<b>1045EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		<b>1600EST</b>							
Heavy rain caused the Swatara Creek at Hershey to exceed its flood stage of 7 feet. The creek rose above flood stage at 10:45 EST on the 29th, crested at 7.01 feet at 11:30 EST on the 29th, and fell below flood stage at 16:00 EST on the 29th.									
<b>PAZ057</b>	<b>Dauphin</b>								
	<b>29</b>	<b>1200EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		<b>1300EST</b>							
Heavy rain caused the Swatara Creek at Middletown to reach flood stage of 11 feet. The creek rose to flood stage at 12:00 EST on the 29th, crested at 11.00 feet at 12:00 EST on the 29th and fell below flood stage at 13:00 EST on the 29th.									
<b>PAZ063</b>	<b>Cumberland</b>								
	<b>29</b>	<b>1655EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
	<b>30</b>	<b>0245EST</b>							
Heavy rain and local runoff caused the Yellow Breeches Creek at Camp Hill to exceed its flood stage of 7 feet again. The creek rose above flood stage at 16:55 EST on the 29th, crested at 7.56 feet at 22:15 EST on the 29th, and fell below flood stage at 02:45 on the 30th.									
<b><u>PENNSYLVANIA, East</u></b>									
<b>Northampton County</b>									
<b>Central Portion</b>	<b>08</b>	<b>1700EST</b>			<b>0</b>	<b>0</b>			<b>Flash Flood</b>
		<b>2300EST</b>							
Heavy rain associated with the remnants of Hurricane Frances caused poor drainage flooding and flooding of some of the streams in Northampton County. Most of the flooding affected the central part of the county the most. A number of stranded vehicles were reported in Nazareth, Bath and Belfast. Tatamy Road was closed near the Nazareth Middle School in Upper Nazareth Township. Doppler Radar storm total estimates reached three inches in the county. Storm totals included 3.37 inches in Forks Township and 1.59 inches at the Lehigh Valley International Airport.									
<b>Berks County</b>									
<b>4 W Birdsboro</b>	<b>17</b>	<b>2100EST</b>			<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G52)</b>

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, East**

A severe thunderstorm knocked down numerous trees and snapped several poles in the Green Hills area of Robeson Township. Sporadic tree wind damage extended for about one mile.

### **Monroe County** **Countywide**

<b>18</b>	<b>0248EST</b>				<b>0</b>	<b>0</b>	<b>8M</b>		<b>Flash Flood</b>
<b>19</b>	<b>2335EST</b>								

### **PAZ055**

#### **Monroe**

<b>18</b>	<b>1538EST</b>				<b>0</b>	<b>0</b>	<b>8M</b>		<b>Flood</b>
<b>20</b>	<b>0132EST</b>								

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall from the late evening of the 17th through the first half of the day on the 18th in Monroe County. Doppler Radar storm total estimates averaged between 3 and 6 inches throughout the county. The torrential rain caused widespread poor drainage, creek and river flooding. It was the worst flooding along the Delaware River since 1955. Every stream in the county flooded. About 160 homes and businesses were damaged. Extensive damage also occurred in the Delaware Water Gap National Recreational Area. President George W. Bush declared the county a disaster area. Damage was estimated at between fifteen and seventeen million dollars.

The Delaware River at Tocks Island was above its 21 foot flood stage from 438 p.m. EDT on the 18th through 232 a.m. EDT on the 20th. It crested at 30.32 feet at 845 a.m. EDT.

The Brodhead Creek at Analomink was above its 8 foot flood stage from 826 a.m. through Noon EDT on the 18th. It crested at 8.53 feet at 10 a.m. EDT. The Pohopoco Creek at Kresgeville was above its 8.5 foot flood stage from 643 a.m. EDT through 951 p.m. EDT on the 18th. It crested at 8.99 feet at 230 p.m. EDT. The Brodhead Creek at Minisink Hills was above its 10 foot flood stage from 927 a.m. EDT on the 18th through 1235 a.m. EDT on the 20th. It crested at 18.27 feet at 815 a.m. EDT on the 19th. The Bush Kill Creek at Shoemakers was above its 6 foot flood stage from 732 a.m. EDT on the 18th through 6 a.m. EDT on the 19th. It crested at 7.27 feet at 230 p.m. EDT on the 18th. The Lehigh River at Stoddartsville was above its 7 foot flood stage from 622 a.m. EDT on the 18th through 221 a.m. EDT on the 19th. It crested at 11.59 feet at 1215 p.m. EDT on the 18th. The Tobyhanna Creek at Blakeslee was above its 10 foot flood stage from 348 a.m. EDT on the 18th through 450 a.m. EDT on the 19th. It crested at 12.71 feet at 1245 p.m. EDT on the 18th.

Storm totals included 6.02 inches at Pocono Summit.

### **Lehigh County** **Countywide**

<b>18</b>	<b>0440EST</b>				<b>0</b>	<b>0</b>	<b>5M</b>		<b>Flash Flood</b>
<b>19</b>	<b>0652EST</b>								

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall during the first half of the day on the 18th in Lehigh County. Storm totals average around 5 inches and caused widespread poor drainage, creek and river flooding throughout the county. Hardest hit were the city of Allentown, Lower Macungie and Macungie Townships. It was estimated that 85 homes, 31 businesses and five public buildings and structures were damaged. The preliminary damage estimate was five million dollars.

The Lehigh River at Walnutport (Northampton County) was above its 8 foot flood stage from 904 a.m. EDT on the 18th through 102 a.m. EDT on the 19th. It crested at 12.32 feet at 245 p.m. EDT on the 18th. Farther downstream the Lehigh River in Bethlehem was above its 16 foot flood stage from 212 p.m. EDT through 1156 p.m. EDT on the 18th. It crested at 18.79 feet at 700 p.m. EDT. The Little Lehigh Creek within Little Lehigh Park was above its 6 foot flood stage from 721 a.m. EDT on the 18th through Midnight EDT on the 19th. It crested at 10.49 feet at 345 p.m. EDT on the 18th. Farther downstream, the Little Lehigh Creek at 10th Street within Allentown was above its 8 foot flood stage from 1040 a.m. EDT through 951 p.m. EDT on the 18th. It crested at 10.05 feet at 615 p.m. EDT. The Monocacy Creek at Bethlehem was above its 4.5 foot flood stage from 540 a.m. EDT on the 18th through 752 a.m. EDT on the 19th. It crested at 9.67 feet at 2 p.m. EDT on the 18th.

Storm totals included 8.90 inches in Orefield, 7.25 inches in Bethlehem, 5.32 inches in Coopersburg and 4.82 inches at the Lehigh Valley International Airport.

### **Northampton County** **Countywide**

<b>18</b>	<b>0440EST</b>				<b>0</b>	<b>0</b>	<b>1M</b>		<b>Flash Flood</b>
<b>19</b>	<b>0652EST</b>								

### **PAZ062**

#### **Northampton**

<b>18</b>	<b>1431EST</b>				<b>0</b>	<b>0</b>	<b>1M</b>		<b>Flood</b>
<b>19</b>	<b>1942EST</b>								

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall during the first half of the day on the 18th in Northampton County. Storm totals average around 5 inches and caused widespread poor drainage, creek and river flooding throughout the county. Runoff from the heavy rain also caused the worst flooding along the Delaware River since 1955. Nearly every township in the county reported flood damage. President George W. Bush declared the county a disaster area. About 865 homes, businesses and structures were damaged including several roads and bridges.

The Delaware River washed a home from Harmony Township (Warren County) downstream. the home crashed into the

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, East**

Easton-Phillipsburg free bridge. The impact sheared the roof from the home and the remainder floated under the bridge.

The Lehigh River at Walnutport (Northampton County) was above its 8 foot flood stage from 904 a.m. EDT on the 18th through 102 a.m. EDT on the 19th. It crested at 12.32 feet at 245 p.m. EDT on the 18th. Farther downstream the Lehigh River in Bethlehem was above its 16 foot flood stage from 212 p.m. EDT through 1156 p.m. EDT on the 18th. It crested at 18.79 feet at 700 p.m. EDT. Farther downstream, the Lehigh River at Glendon was above its 19 foot flood stage from 1118 a.m. EDT on the 18th through 620 a.m. EDT on the 19th. It crested at 19.82 feet at 415 p.m. EDT on the 18th. The Monocacy Creek at Bethlehem was above its 4.5 foot flood stage from 540 a.m. EDT on the 18th through 752 a.m. EDT on the 19th. It crested at 9.67 feet at 2 p.m. EDT on the 18th.

Along the Delaware River at Belvidere, the river was above its 22 foot flood stage from 1101 p.m. EDT on the 18th through 842 p.m. EDT on the 19th. It crested at 24.83 feet at 915 a.m. EDT on the 19th. Farther downstream, the Delaware River at the Easton-Phillipsburg Bridge was above its 22 foot flood stage from 331 p.m. EDT on the 18th through 1126 a.m. EDT on the 20th. It crested at 33.45 feet at 8 a.m. EDT on the 19th.

Storm totals included 7.25 inches in Bethlehem, 6.88 inches in Forks Township and 4.70 inches in Easton.

### **Montgomery County Northwest Portion**

<b>18</b>	<b>0557EST</b>			<b>0</b>	<b>0</b>		<b>Flash Flood</b>
	<b>2214EST</b>						

### **PAZ068**

<b>Montgomery</b>							
<b>18</b>	<b>2214EST</b>			<b>0</b>	<b>0</b>		<b>Flood</b>
<b>19</b>	<b>1118EST</b>						

The remnants of Hurricane Ivan interacted with an approaching cold front and dropped very heavy rain across Montgomery County, especially in the northwestern half of the county. The heaviest rain fell between 3 a.m. EDT and Noon EDT on the 18th. There was widespread poor drainage flooding as well as flooding of many of the streams in the northwest part of the county. Doppler Radar storm total estimates ranged between 1.5 and 5.0 inches. Runoff from the heavy rain within the county and also upstream led to flooding along the Schuylkill River. The West Branch of the Perkiomen Creek at Hillegass was above its 5 foot flood stage from 1018 a.m. EDT through 231 p.m. EDT on the 18th. It crested at 5.76 feet at Noon EDT. The East Branch of the Perkiomen Creek at Schwenksville was above its 7 foot flood stage from 657 a.m. EDT through 1017 p.m. EDT on the 18th. It crested at 10.35 feet at 830 a.m. EDT on the 18th. The main stem of the Perkiomen Creek at East Greenville was above its 5 foot flood stage from 742 a.m. through 529 p.m. EDT on the 18th. It crested at 7.07 feet at 10 a.m. EDT. Farther downstream, the Perkiomen Creek at Graterford was above its 11 foot flood stage from 942 a.m. EDT through 1043 p.m. EDT on the 18th. It crested at 14.8 feet at 330 p.m. EDT on the 18th. The Manatawny Creek at Pottstown was above its 6 foot flood stage from 1103 a.m. EDT through 10 p.m. EDT on the 18th. It crested at 7.41 feet at 7 p.m. EDT. The Schuylkill River at Pottstown was above its 13 foot flood stage from 714 p.m. EDT on the 18th through 1218 p.m. EDT on the 19th. It crested at 14.59 feet at 530 a.m. EDT on the 19th.

Storm totals included 4.50 inches in Pottstown, 4.00 inches in Hatfield and Green Lane, 3.78 inches in Palm and 3.12 inches at the Pottstown Airport.

### **Bucks County Northwest Portion**

<b>18</b>	<b>0630EST</b>			<b>0</b>	<b>0</b>	<b>1M</b>	<b>Flash Flood</b>
	<b>1622EST</b>						

### **PAZ069**

<b>Bucks</b>							
<b>18</b>	<b>1622EST</b>			<b>0</b>	<b>0</b>	<b>24M</b>	<b>Flood</b>
<b>20</b>	<b>1145EST</b>						

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy in the upper part of Bucks County during the first half of the day on the 18th. Very heavy rain also fell in the upper and middle sections of the Delaware River Valley. The runoff from both produced widespread poor drainage and creek flooding in the upper part of Bucks County and the worst flooding along the Delaware River since 1955. President George W. Bush declared Bucks County a disaster area. Municipalities and roadways along the Delaware River and the Lehigh County were hardest hit and they included Quakertown, Springfield, Durham, Nockamixon, Bridgeton, Tinicum, Solebury, Upper Makefield, Yardley and Lower Makefield. Around 500 homes and 29 businesses were damaged. Damage was estimated at 25 million dollars.

The Delaware River at Riegelsville was above its 22 foot flood stage from 522 p.m. EDT on the 18th through 1025 a.m. EDT on the 20th. It crested at 30.95 feet at 1115 a.m. EDT on the 19th. The Delaware River at Frenchtown (Hunterdon County) was above its 16 foot flood stage from 6 p.m. EDT on the 18th through 927 a.m. EDT on the 20th. It crested at 20.7 feet at 1 p.m. EDT on the 19th. The Delaware River at Stockton (Hunterdon County) was above its 18 foot flood stage from Midnight EDT on the 19th through 836 a.m. EDT on the 20th. It crested at 22.5 feet at 3 p.m. EDT on the 19th. The Delaware River at Washington's Crossing was above its 20 foot flood stage from 416 p.m. EDT through 828 p.m. EDT on the 19th. It crested at 20.12 feet at 5 p.m. EDT. The Delaware River at Trenton (Mercer County) was above its 20 foot flood stage from 148 a.m. EDT on the 19th through 1245 p.m.

## Storm Data and Unusual Weather Phenomena

		Time	Path	Path	Number of		Estimated		September 2004
		Local/	Length	Width	Persons		Damage		
Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	

## PENNSYLVANIA, East

EDT on the 20th. It crested at 23.39 feet at 731 p.m. EDT on the 19th. Flood stage is also 20 feet.

The East Branch of the Perkiomen Creek at Dublin was above its 5 foot flood stage from 1242 a.m. EDT through 249 p.m. EDT on the 18th. It crested at 6.08 feet at 130 p.m. EDT.

Specific storm totals included 5.97 inches in Springtown, 3.70 inches in Sellersville, 3.27 inches in Perkasio and 3.06 inches in Fricks.

**Delaware County  
Countywide**

18	0806EST 1618EST	0	0	Flash Flood
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## PAZ070

## Delaware

18	1652EST	0	0	Flood
19	0316EST			

The remnants of Hurricane Ivan interacted with an approaching cold front and dropped very heavy rain across Delaware County in the morning and into the early afternoon on the 18th. Heavier rain fell upstream in Chester County and the runoff affected the Brandywine Creek. Doppler Radar storm estimates ranged between 1 and 4 inches with the heaviest amounts along the Chester County border. Chester Creek at Chester was above its 5 foot flood stage from 1242 p.m. through 249 p.m. EDT on the 18th. It crested at 8.58 feet at 300 p.m. EDT. The Crum Creek at Newtown Square was above its 6 foot flood stage from 906 a.m. through 518 p.m. EDT on the 18th. It crested at 8.38 feet at 215 p.m. EDT. The Brandywine Creek at Chadds Ford was above its 9 foot flood stage from 552 p.m. EDT on the 18th through 416 a.m. EDT on the 19th. It crested at 9.86 feet at 1212 a.m. EDT on the 19th.

## Berks County Countywide

18	0818EST 1938EST	0	0	Flash Flood
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## PAZ060

## Berks

18	1938EST	0	0	Flood
19	0428EST			

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall from late in the evening on the 17th until around 10 a.m. EDT on the 18th in Berks County. Doppler Radar storm total estimates ranged between 2.5 inches and 5 inches across most of the county. This caused poor drainage and creek flooding and also Schuylkill River flooding.

The Schuylkill River at Berne was above its 12 foot flood stage from 918 a.m. EDT on the 18th through 1236 a.m. EDT on the 19th. It crested at 15.05 feet at 345 p.m. EDT on the 18th. Farther downstream, the Schuylkill River at Reading was above its 13 foot flood stage from 146 p.m. EDT on the 18th through 528 a.m. EDT on the 19th. It crested at 16.13 feet at 11 p.m. EDT on the 18th. The Manatawny Creek at Spangville was above its 6 foot flood stage from 923 a.m. EDT through 838 p.m. EDT on the 18th. It crested at 7.5 feet at 330 p.m. EDT.

Storm totals included 4.18 inches in Reading and 3.57 inches in Hamburg.

## Carbon County Countywide

18	0837EST	0	0	Flash Flood
19	1010EST			

## PAZ054

## Carbon

19	1010EST	0	0	Flood
21	0951EST			

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall from late in the evening on the 17th until around 10 a.m. EDT on the 18th. Storm totals average around 5 inches and caused poor drainage, creek and river flooding throughout Carbon County. Hardest hit were Palmerton Borough and Penn Forest and Kidder Townships. President George W. Bush declared the county a disaster area. Eighty-nine homes and four businesses were damaged. Seven public buildings and structures were damaged including the Henning Road Bridge over Mud Run Creek.

In Palmerton Borough, the flooding Aquashicola Creek flooded ten homes into their first floor. The Aquashicola Creek at Palmerton was above its 7 foot flood stage from 937 a.m. EDT on the 18th through 104 a.m. EDT on the 19th. It crested at 12.17 feet at 2 p.m. EDT on the 18th. The Lehigh River at Lehighton was above its 10 foot flood stage from 940 a.m. EDT through 522 p.m. EDT on the 18th. It crested at 12.04 feet at 100 p.m. EDT. The Pohopoco Creek at Parryville was above its 5.5 foot flood stage from 1110 a.m. EDT on the 19th through 1051 a.m. EDT on the 21st. It crested at 5.71 feet at 1230 a.m. EDT on the 19th.

Storm totals included 6.03 inches at the Wilkes-Barre Scranton Airport in Luzerne County and 4.55 inches in Lehigh.

## Chester County Countywide

18	0838EST 1813EST	0	0	Flash Flood
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# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, East**

### **PAZ067**

#### **Chester**

**18 1813EST**

**0 0**

**Flood**

**19 1118EST**

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain to fall from during the first half of the day on the 18th. Most storm totals average between 2.5 and 4.0 inches and caused widespread poor drainage and creek flooding throughout Chester County.

The French Creek at Phoenixville was above its 8 foot flood stage from 1119 a.m. through 645 p.m. EDT on the 18th. It crested at 9.51 feet at 230 p.m. EDT. The Valley Creek at Valley Forge was above its 7 foot flood stage from 938 a.m. EDT through 509 p.m. EDT on the 18th. It crested at 8.63 feet at 330 p.m. EDT. The White Clay Creek at Strickersville was above its 9.5 foot flood stage from 327 p.m. EDT through 451 p.m. EDT on the 18th. It crested at 9.72 feet at 415 p.m. EDT. The East Branch of the Brandywine Creek at Downingtown was above its 7 foot flood stage from 1137 a.m. EDT through 713 p.m. EDT on the 18th. It crested at 10.11 feet at 4 p.m. EDT. Flood stage is 7 feet. The West Branch of the Brandywine Creek at Honey Brook was above its 7 foot flood stage from 1222 p.m. EDT through 538 p.m. EDT on the 18th. It crested at 8.01 feet at 245 p.m. EDT. The main stem of the Brandywine Creek at Chadds Ford was above its 9 foot flood stage from 552 p.m. EDT on the 18th through 416 a.m. EDT on the 19th. It crested at 9.86 feet at 1212 a.m. EDT on the 19th. The Schuylkill River at Pottstown (Montgomery County) was above its 13 foot flood stage from 714 p.m. EDT on the 18th through 1218 p.m. EDT on the 19th. It crested at 14.59 feet at 530 a.m. EDT.

Storm totals included 3.93 inches in Exton, 3.40 inches in West Chester, 2.82 inches in Honey Brook and 2.78 inches in East Nantmeal Township.

### **PAZ071**

#### **Philadelphia**

**18 1836EST**

**0 0**

**Flood**

**19 0211EST**

The remnants of Hurricane Ivan interacting with a slowly moving cold front caused widespread very heavy rain in the upstream areas in the Schuylkill River Basin. Runoff from the heavy rain led to flooding along the Schuylkill River within the city from the evening of the 18th into the early morning of the 19th. The Schuylkill River in Philadelphia was above its 11 foot flood stage from 736 p.m. EDT on the 18th through 311 a.m. EDT on the 19th. It crested at 11.33 feet at 1030 p.m. EDT on the 18th. The heavy runoff along the Schuylkill river also caused the Wissahickon Creek at its mouth (where it merges with the Schuylkill River) to briefly (5 minutes) rise above its 5 foot flood stage and crested at 5.09 feet at 330 p.m. EDT on the 18th.

### **PAZ070-070>071-071**

#### **Delaware - Philadelphia**

**19 1400EST**

**0 0**

**0 Astronomical High Tide**

**20 1800EST**

The combination of runoff from the heavy rain that fell upstream in the Delaware River and the incoming high tide produced minor tidal flooding along the Delaware River and tidal parts of its tributaries during the late afternoon high tide on both the 19th and 20th. The highest tides occurred during the afternoon of the 19th. The Delaware River at Pier 12 in Philadelphia reached a height of 8.96 feet above mean lower low water at 518 p.m. EDT on the 19th. Minor tidal flooding begins at 8.2 feet above mean lower low water.

### **Chester County**

#### **Countywide**

**28 1530EST**

**0 0**

**Flash Flood**

**29 1635EST**

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates ranged between 3 and 8 inches with the highest amounts toward the Delaware County border. Widespread poor drainage, stream and creek flooding occurred. Many roads were flooded and closed and numerous water rescues were performed. Shelters were opened because of flooding along the East Branch of the Brandywine Creek in Downingtown.

The East Branch of the Brandywine Creek at Downingtown was above its 7 foot flood stage from 636 p.m. EDT on the 28th through 744 a.m. EDT on the 29th. It crested at 12.83 feet at 1101 p.m. EDT on the 28th. The West Branch of the Brandywine Creek at Honey Brook was above its 7 foot flood stage from 1211 a.m. EDT through 327 a.m. EDT on the 29th. It crested at 7.21 feet at 130 a.m. EDT. The main stem of the Brandywine Creek at Chadds Ford was above its 9 foot flood stage from 619 p.m. EDT on the 28th through 535 p.m. EDT on the 29th. It crested at 13.62 feet at 243 a.m. EDT on the 29th. The French Creek at Phoenixville was above its 8 foot flood stage from 815 p.m. EDT on the 28th through 328 a.m. EDT on the 29th. It crested at 9.11 feet at 1115 p.m. EDT on the 28th. The Red Clay Creek at Kenneth Square was above its 7.5 foot flood stage from 608 p.m. EDT on the 28th through 210 a.m. EDT on the 29th. It crested at 9.65 feet at 815 p.m. EDT on the 28th. The White Clay Creek at Strickersville was above its 9.5 foot flood stage from 552 p.m. EDT on the 28th through 356 a.m. EDT on the 29th. It crested at 14.07 feet at 1115 p.m. EDT on the 28th. The Valley Creek at Valley Forge was above its 7 foot flood stage from 635 p.m. EDT on the 28th through 504 a.m. EDT on the 29th. It crested at 10.91 feet at 10 a.m. EDT on the 29th.

Storm totals included 9.00 inches in Avondale, 8.97 inches in West Chester, 8.00 inches in Uwchlan Township, 6.63 inches in Strickersville, 6.50 inches in Downingtown, 5.30 inches in Valley Forge, 4.57 inches in Modena, 3.76 inches in Glenmoore and 2.47 inches in Honey Brook.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, East**

Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Delaware County Countywide**

<b>28</b>	<b>1530EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>1635EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates ranged between 3 and 8 inches with the highest amounts toward the Chester County border. Widespread poor drainage, stream and creek flooding occurred. Many roads were flooded and closed and numerous water rescues were performed. Evacuations occurred along the Darby Creek in Darby Borough, Marple Township and Upper Darby Township. Darby Creek flooding also affected Clifton Heights and Collingdale. Flooding was also reported along the Hermesprot Creek in Sharon Hill.

The Chester Creek at Chester was above its 8 foot flood stage from 646 p.m. EDT on the 28th through 830 a.m. EDT on the 29th. It crested at 16.33 feet at 215 a.m. EDT on the 29th. Crum Creek at Newtown Square was above its 6 foot flood stage from 618 p.m. EDT on the 28th through 345 a.m. EDT on the 29th. It crested at 11.14 feet at 930 p.m. EDT on the 28th. The Brandywine Creek at Chadds Ford was above its 9 foot flood stage from 619 p.m. EDT on the 28th through 535 p.m. EDT on the 29th. It crested at 13.62 feet at 243 a.m. EDT on the 29th.

Storm totals included 7.84 inches in Chadds Ford and 5.49 inches in Upper Providence. A SKYWARN Spotter reported 7 inches of rain in Havertown before his rain gage overflowed.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Chester County West Chester**

<b>28</b>	<b>1550EST</b>	<b>0</b>	<b>0</b>	<b>Thunderstorm Wind (G50)</b>
	<b>1630EST</b>			

A series of severe thunderstorms knocked down several large tree limbs and wires in the southeastern part of Chester County.

### **Montgomery County Countywide**

<b>28</b>	<b>1600EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>0659EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 3 and 8 inches with the highest amounts toward Philadelphia. Widespread poor drainage and creek flooding occurred, especially in the lower part of the county. Many roads were flooded and closed and numerous water rescues were performed. Boats were used to rescue stranded motorists.

The East Branch of the Perkiomen Creek at Schwenksville was above its 7 foot flood stage from 731 p.m. EDT on the 28th through 759 a.m. EDT on the 29th. Along the main stem of the Perkiomen Creek, at Graterford, the creek was above its 11 foot flood stage from 1013 p.m. EDT on the 28th through 738 a.m. EDT on the 29th. It crested at 12.5 feet at 4 a.m. EDT on the 29th. Gaged sites of the Pennypack and Wissahickon Creeks within Philadelphia all flooded.

Storm totals included 8.22 inches in Blue Bell, 7.90 inches in Ambler, 6.70 inches in Norristown, 6.28 inches in Wynnwood, 6.15 inches in King of Prussia, 6.11 inches in Hatboro, 4.75 inches in Pottstown, 4.29 inches in Eagleville, 4.26 inches in Willow Grove, 3.26 inches in Green Lane and 3.04 inches in Palm.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Bucks County Countywide**

<b>28</b>	<b>1600EST</b>	<b>0</b>	<b>0</b>	<b>Flash Flood</b>
<b>29</b>	<b>1413EST</b>			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 3 and 8 inches with the highest amounts toward Philadelphia. Widespread poor drainage and creek flooding occurred, especially in the lower part of the county. Many roads were flooded and closed and numerous water rescues were performed.

The East Branch of the Perkiomen Creek at Dublin was above its 5 foot flood stage from 729 p.m. EDT through 1105 p.m. EDT on

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, East**

the 28th. It crested at 6.49 feet at 848 p.m. EDT. The Little Neshaminy Creek at Neshaminy was above its 8 foot flood stage from 650 p.m. EDT on the 28th through 236 a.m. EDT on the 29th. It crested at 9.91 feet at 11 p.m. EDT on the 28th. The main stem of the Neshaminy Creek at Langhorne was above its 9 foot flood stage from 829 p.m. EDT on the 28th through 313 p.m. EDT on the 29th. It crested at 15.21 feet at 630 a.m. EDT on the 29th.

Storm totals included 6.50 inches in Neshaminy Falls, 6.08 inches in Morrisville, 5.88 inches in Furlong, 5.63 inches in Levittown, 5.06 inches in Doylestown, 4.38 inches in Sellersville, 4.22 inches in Fricks and 3.48 inches in Springtown.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Delaware County**

#### **Radnor**

28	1625EST	0	0	Thunderstorm Wind (G52)
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A severe thunderstorm pulled down several trees and wires in Radnor Township.

### **Philadelphia County**

#### **Countywide**

28	1636EST	1	0	2M	0	Flash Flood
29	1018EST					

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates averaged between 4 and 8 inches with the highest amounts in the northwest part of Philadelphia. Widespread poor drainage and creek flooding occurred throughout the city. All roads near creeks flooded. Many roads were flooded and closed and numerous water rescues were performed. The heaviest rain coincided with the evening commute home. A 26-year-old woman drowned when she was swept off her feet while waiting to board a SEPTA bus in the East Falls section of the city. The flood waters carried her downhill and she became trapped under a parked pickup truck where in spite of the efforts of six people, she drowned. The heavy rain also caused several abandoned buildings to collapse.

The Frankford Creek at Castor Avenue was above its 7 foot flood stage from 536 p.m. EDT on the 28th through 216 a.m. EDT on the 29th. It crested at 13.91 feet at 730 p.m. EDT on the 28th. The Wissahickon Creek at its mouth with the Schuylkill River was above its 5 foot flood stage from 538 p.m. EDT on the 28th through 1118 a.m. EDT on the 29th. It crested at 10.14 feet at 2 a.m. EDT on the 29th. The Pennypack Creek at the Rhawn Street Bridge was above its 7 foot flood stage from 624 p.m. EDT on the 28th through 839 a.m. EDT on the 29th. It crested at 12.63 feet at 3 a.m. EDT on the 29th. The Schuylkill River at Philadelphia was above its 11 foot flood stage from 1136 p.m. EDT on the 28th through 1013 a.m. EDT on the 29th. It crested at 11.86 feet at 4 a.m. EDT on the 29th.

Storm totals included 9.12 inches in Roxborough, 5.98 inches at the Fairmont Dam, 5.77 inches at the Northeast Philadelphia Airport and 3.63 inches at the Philadelphia International Airport.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further. ?26OU

### **Berks County**

#### **Leesport to Birdsboro**

28	1800EST	0	0	Flash Flood
29	0135EST			

The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused torrential downpours to occur during the late afternoon and evening of the 28th. Doppler Radar storm total estimates ranged between 2 and 5 inches with the highest amounts toward the Chester County border. Poor drainage, stream and creek flooding occurred, mainly in the southeast quarter of the county. Many roads were flooded. The Manatawny Creek at Spangville was briefly above its 6 foot flood stage from 1235 a.m. through 235 a.m. EDT on the 29th. It crested at 6.06 feet at 130 a.m. EDT on the 29th. Storm totals included 3.44 inches in Hamburg, 2.88 inches in Bethel, 2.82 inches in Berne, 2.64 inches in Reading.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

### **Lehigh County**

#### **Countywide**

28	1900EST	0	0	Flash Flood
	2300EST			

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## PENNSYLVANIA, East

### Northampton County

Countywide	28	1900EST 2300EST			0	0			Flash Flood
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The remnants of Hurricane Jeanne interacting with two frontal boundaries in the region caused bands of heavier rain to fall across the Lehigh Valley from the late morning through the evening of the 28th in the Lehigh Valley. Doppler Radar storm total estimates averaged between 2 and 4 inches with the highest amounts toward the Montgomery and Bucks County borders. Widespread poor drainage and scattered stream and creek flooding occurred. Many roads were flooded and some were closed. The flooding was not nearly as severe as it was with the remnants of Hurricane Ivan. In Northampton County, roads were closed in Forks Township, Palmer Township and Wilson Borough.

Storm totals included 4.40 inches in Orefield (Lehigh County), 3.90 inches in Forks Township (Northampton County) and 2.82 inches at the Lehigh Valley International Airport.

The remnants of Hurricane Jeanne tracked across Georgia and North Carolina and then northeast across the central Delmarva Peninsula and extreme southern New Jersey. A frontal boundary that passed through the region of the 26th stalled offshore and came back as a warm front on the 28th. This front stalled close to the Interstate 95 corridor. The remnants of Jeanne tracked along this frontal boundary. At the same time a cold front approaching from the Saint Lawrence Valley on the morning of the 28th helped wring the tropical moisture over the area even further.

PAZ070>071

### Delaware - Philadelphia

	30	0000EST 1600EST			0	0	0		Astronomical High Tide
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The combination of the runoff from the heavy rain from the remnants of Hurricane Jeanne and the spring tides associated with the full moon caused minor tidal flooding during the high tide cycles on the Pennsylvania side of the Delaware River and tidal sections of its tributaries on the 30th. The highest tides occurred with the high tide during the early morning on the 30th. That high tide reached 8.57 feet above mean lower low water at Pier 12 in Philadelphia. Minor tidal flooding begins at 8.2 feet above mean lower low water.

## PENNSYLVANIA, Northeast

### Bradford County

Countywide	17	1900EST			0	0	20M		Flash Flood
	18	1200EST							

Heavy rain with amounts of 3 to 7 inches fell from the 16th to the 18th. The rain was due to remnants from hurricane Ivan. All creeks and streams went out of their banks causing major problems. Early on the 18th more than half of the roads in the county were closed, prompting a state of emergency to be issued. River flooding also occurred along the entire length of the Susquehanna River. 50 homes, 5 businesses, and dozens of roads and bridges were damaged. At least 20 water rescues occurred.

### Susquehanna County

Countywide	17	2130EST			0	0	10M		Flash Flood
	18	1200EST							

Heavy rain with amounts of 4.5 to 7 inches caused flash flooding. The rain which fell from the 16th to the 18th was due to the remnants of hurricane Ivan. Most creeks and streams went out of their banks. Over 300 homes were affected by flooding with 132 having minor damage, 21 having major damage, and 4 being totally destroyed. 27 businesses were affected with 19 having minor damage and 8 having major damage. Dozens of roads and bridges were damaged. About 750 people had to evacuate their homes. Their was flooding where there had never been any before. One major bridge was destroyed.

### Wyoming County

Countywide	17	2200EST			0	0	15M		Flash Flood
	18	1200EST							

Heavy rain with amounts of 5 to 7 inches caused flash flooding. The rain which fell from the 16th to the 18th was due to the remnants of hurricane Ivan. 500 homes and 30 businesses were damaged. 50 water rescues were reported. The hardest hit areas were Tunkhannock, Eaton Township, Nicholson, Exeter, Meshoppen, and Laceyville. In Nicholson, the Shadow Brook did major damage. The county declared a state of emergency and closed all roads to the public early Saturday morning. In addition the Susquehanna River had major flooding.

PAZ038

### Bradford

	18	0207EST			0	0	1M		Flood
	20	1000EST							

The north branch of the Susquehanna River at Waverly, NY and Sayre, PA rose above its flood stage of 11 feet early on the 18th, crested at 18.8 feet at 11:30 PM on the 18th, then slowly fell to be below its flood stage late morning on the 20th. Rainfall amounts were 2 to 5 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

### Luzerne County

Countywide	18	0210EST 1200EST			0	0	100M		Flash Flood
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Heavy rain with amounts of 4.0 to 6.5 inches caused major flash flooding. Almost all of the streams and creeks came out of their banks. In addition, the Susquehanna River also caused major flooding. Solomon's Creek in Wilkes-Barre Township was the first to flood. This creek caused businesses to close and people to evacuate. 4000 homes and dozens of businesses were damaged. Mercy Hospital had damage to its lower levels. The hardest hit areas were Shickshinny, Moconqua, Plains, and Plymouth Township.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

## **PENNSYLVANIA, Northeast**

### **Wayne County**

#### **Countywide**

**18 0300EST**  
**1800EST** **0 0 15M** **Flash Flood**

Heavy rain with amounts of 5 to 7 inches caused flash flooding. The rain which fell from the 16th to the 18th was due to the remnants of hurricane Ivan. Most creeks and streams went out of their banks. In addition, the Delaware and Lackawaxen Rivers had major flooding. At least 1000 homes were damaged, 10 of which were completely destroyed. The county Emergency Management Agency had damage to their office in the basement of the County Courthouse. Dozens of bridges were closed with 2 bridges destroyed. There were at least 50 roads that were damaged and/or closed due to the flooding.

### **Lackawanna County**

#### **Countywide**

**18 0315EST**  
**1200EST** **0 0 20M** **Flash Flood**

Heavy rain with amounts of 4.5 to 7.5 inches caused flash flooding. The rain which fell from the 16th to the 18th was due to the remnants of hurricane Ivan. All creeks and streams were out of their banks. In addition, the Lackawanna River had major flooding. Almost 1000 homes and over 30 businesses were damaged. A 40 foot deep sinkhole developed on Pittston Avenue.

### **PAZ043**

#### **Wyoming**

**18 0323EST**  
**19 0000EST** **0 0 1M** **Flood**

The Tunkhannock Creek at Tunkhannock rose above its flood stage of 11 feet early on the 18th, crested at 19.7 feet at 3:30 PM on the 18th, then fell below its flood stage around midnight on the 19th. This was the second highest crest on record. Rainfall amounts were 4 to 7 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

### **PAZ044**

#### **Lackawanna**

**18 0352EST**  
**2100EST** **0 0 1M** **Flood**

The Lackawanna River at Old Forge rose above its flood stage of 11 feet early on the 18th, crested at 16.7 feet at 3:30 PM on the 18th, then fell below its flood stage in the evening also on the 18th. This was the third highest crest on record. Rainfall amounts were 4 to 7 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

### **PAZ072**

#### **Southern Wayne**

**18 0421EST**  
**19 0300EST** **0 0 500K** **Flood**

The Lackawaxen River at Hawley rose above its flood stage of 11 feet the morning of the 18th, crested at 14.5 feet at 5:15 PM on the 18th, then fell below the flood stage early in the morning on the 19th. Rainfall amounts were 4 to 7 inches due to the remnants of hurricane Ivan. The rain fell from the 16th to the 18th. The crest was the fifth highest recorded at Hawley.

### **PAZ048**

#### **Pike**

**18 0421EST**  
**19 0300EST** **0 0 500K** **Flood**

The Lackawaxen River at Hawley rose above its flood stage of 11 feet the morning of the 18th, crested at 14.5 feet at 5:15 PM on the 18th, then fell below the flood stage early in the morning on the 19th. Rainfall amounts were 4 to 7 inches due to the remnants of hurricane Ivan. The rain fell from the 16th to the 18th. The crest was the fifth highest recorded at Hawley.

### **PAZ038**

#### **Bradford**

**18 0452EST**  
**19 1800EST** **0 0 1M** **Flood**

The north branch of the Susquehanna River at Towanda rose above its flood stage of 16 feet early on the 18th, crested at 22.3 feet at 7:16 PM on the 18th, then slowly fell to be below its flood stage early evening on the 19th. Rainfall amounts were 2 to 5 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

### **PAZ043**

#### **Wyoming**

**18 0549EST**  
**20 0300EST** **0 0 1M** **Flood**

The Susquehanna River at Meshoppen rose above its flood stage of 27 feet early on the 18th, crested at 35.3 feet at 6:15 PM on the 18th, then slowly fell to be below its flood stage early in the morning of the 20th. This was the third highest crest on record. Rainfall amounts were 4 to 7 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

### **Pike County**

#### **Countywide**

**18 0600EST**  
**1700EST** **0 0 15M** **Flash Flood**

Heavy rain with amounts of 3.5 to 6 inches caused flash flooding. The rain which fell from the 16th to the 18th was due to the remnants of hurricane Ivan. Most creeks and streams went out of their banks. In addition, the Delaware and Lackawaxen Rivers had major flooding. About a dozen rescues were performed. Over 100 roads were closed. The entire borough of Newfoundland in western Pike County was evacuated. 6 bridges were closed. 2 businesses were closed.

### **PAZ040**

#### **Northern Wayne**

**18 0630EST**  
**19 0900EST** **0 0 1M** **Flood**

The Delaware River at Callicoon, NY (near Abrahamsville, PA) rose above its flood stage of 12 feet the morning of the 18th, crested at 17.3 feet at 4:45 PM on the 18th, then fell below the flood stage the morning of the 19th. Rainfall amounts were 4 to 7 inches due to the remnants of hurricane Ivan. The rain fell from the 16th to the 18th. This was the highest crest on record by about a foot at the river gage at Callicoon.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, Northeast**

**PAZ048**

**Pike**

**18 0815EST**

**0**

**0**

**1M**

**Flood**

**19 1000EST**

The Delaware River at Barryville, NY (near Shohola, PA) went above its flood stage of 17 feet the morning of the 18th, crested at 24.1 feet at 3:15 PM EST on the 18th, then fell back below the flood stage late morning on the 19th. Rainfall amounts were 4 to 7 inches due to the remnants of hurricane Ivan. The rain fell from the 16th to the 18th. This was the second highest crest on record at Barryville. The highest crest was in 1955.

**PAZ047**

**Luzerne**

**18 1151EST**

**0**

**0**

**5M**

**Flood**

**20 1400EST**

The north branch of the Susquehanna River at Wilkes-Barre rose above its flood stage of 22 feet midday on the 18th, crested at 35.0 feet at 1:00 AM on the 19th, then slowly fell to be below its flood stage midday on the 20th. This was the third highest crest on record. Rainfall amounts were 4 to 7 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

**PAZ048**

**Pike**

**18 1322EST**

**0**

**0**

**1M**

**Flood**

**19 0300EST**

The Delaware River at Port Jervis, NY (near Matamoras, PA) rose above its flood stage of 18 feet during the afternoon on the 18th, crested at 19.5 feet at 4:45 PM on the 18th, then fell below its flood stage early in the morning of the 19th. This was the fifth highest crest on record. Rainfall amounts were 4 to 7 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

**PAZ048**

**Pike**

**18 1422EST**

**0**

**0**

**1M**

**Flood**

**19 0800EST**

The Delaware River at Montague, NJ (near Milford, PA) rose above its flood stage of 25 feet during the afternoon on the 18th, crested at 28.4 feet at 10:15 PM on the 18th, then fell below its flood stage the morning of the 19th. Rainfall amounts were 4 to 7 inches which started on the 16th and continued into the 18th. This rain was from the remnants of hurricane Ivan.

## **PENNSYLVANIA, Northwest**

**PAZ003**

**Crawford**

**08 1904EST**

**0**

**0**

**250K**

**Flood**

**2220EST**

One to three inches of rain fell on Crawford County during the afternoon and evening hours. This rain was associated with the remnants of Tropical Storm Frances. Runoff from the rain caused lowland flooding to begin just after sunset. This flooding gradually worsened as the evening progressed. Reports of street and basement flooding were common.

**Crawford County  
Countywide**

**08 2220EST**

**0**

**0**

**11.5M**

**Flash Flood**

**09 0830EST**

Heavy rains associated with the remnants of Tropical Storm Frances caused extensive flooding in Crawford County. Light rain associated with this storm began falling early on September 8th. Rainfall rates increased during the evening hours as the low approached Northwest Pennsylvania. Rainfall totals through midnight on the 9th were as high as 4 to 5 inches, especially in southern Crawford County. The heavy rain continued through early morning hours and finally ended around daybreak after another two to four inches of rain had fallen. Storm total rainfall amounts included: around 4.0 inches at Conneaut Lake; 4.20 inches at Titusville; 5.07 inches at the Meadville Airport; 5.57 inches at Saegertown, 6.0 inches at Meadville; 7.8 inches at Springboro and 10.0 inches at Cambridge Springs. This rain caused rapid rises in area streams and creeks. Evacuations in the county began just after 11 p.m. after Crooked Creek left its banks near Adamsville and Hartstown. The flooding worsened during the early morning hours with many road washouts and evacuations reported. Around 3 a.m., two dozen residents were evacuated from homes along Conneaut Creek in Conneautville with some of the people rescued from second floor windows. Around 30 homes (most along West Street) in this area were heavily damaged by the flooding. Nearby, seven people had to be rescued from their vehicle after flood waters washed it off the road. Church Run, Sugar Creek and Oil Creek left their banks in the southeast corner of the county damaging many homes and washing out several roads. Several people had to be rescued from homes along Shenango Creek in South Shenango Township around 4 a.m. In Meadville, French Creek rapidly rose during the early morning hours. Many people had to be evacuated from homes in the city's Fifth Ward. North of Meadville, flooding along Cussewago Creek washed out a road causing a car to leave the road. The driver was later rescued. Evacuations and extensive flood damage were also reported in the Cambridge Springs, Linesville and Springboro areas. Over 1,200 homes in Crawford County were damaged by flooding caused by Frances. At least several dozen of these were either destroyed or heavily damaged. Damage to roads in the county topped \$2 million. See the flood description for September 9th through the 11th for information on the subsequent flooding along French Creek in Meadville.

**PAZ001>002**

**Northern Erie - Southern Erie**

**08 1930EST**

**0**

**0**

**500K**

**Flood**

**09 0130EST**

Two to four inches of rain fell on Erie County on September 8th through the early morning hours of the 9th. This rain was associated with the remnants of Tropical Storm Frances. Runoff from the rain caused lowland flooding to begin during the evening hours. This flooding gradually worsened as the evening progressed. Reports of street and basement flooding were common, especially in the southern portion of the county.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## PENNSYLVANIA, Northwest

### Erie County Countywide

**09 0130EST  
0830EST 0 0 5.6M Flash Flood**

Heavy rains associated with the remnants of Tropical Storm Frances persisted during the early morning hours of September 9th. The rain eventually ended around daybreak. Storm total rainfall amounts from early on the 8th through the 9th generally ranged from 3 to 6 inches in Erie County. Some totals included: 3.5 inches at North East; 3.59 inches at Erie International Airport; 4.32 inches at Union City; 4.75 inches at Corry; 5.0 inches on the east side of Erie; 5.4 inches at Cranesville; 6.5 inches at Edinboro and 7.44 inches at Franklin Center. Runoff from this rain caused extensive flash flooding in Erie County during the morning hours of the 9th. Evacuations began in the Edinboro and McKean areas around 2:30 a.m. The flooding in Edinboro was particularly severe. Water overflowed a dam on Edinboro Lake in the city. Hundreds of residents downstream of the dam, including students at Edinboro University, were evacuated because of the possibility of a dam failure. Cottages just south of the dam were reported to be completely submerged. A bridge just south of the city on State Route 99 was washed out. A second bridge was destroyed north of Edinboro in Washington Township. A landslide wiped out around 500 feet of State Route 5 in Fairview Township between 3 and 4 a.m. Cars and buildings along State Route 5 were damaged by the debris. Elk Creek went into flood around the same time in Fairview forcing several dozen people to be evacuated along State Route 98. In Mill Creek Township, residents were evacuated from two mobile home parks that had flood waters up to three feet deep. Significant flooding was also reported in the Albion and Corry areas. Four vehicles were stranded in flood waters up to four feet deep east of Erie along Interstate 90. A total of 20 roads were either washed out or damaged in the county. Hundreds of homes in the county were damaged by the flooding. Several of these were damaged enough to be declared destroyed.

### PAZ001>003

#### **Northern Erie - Southern Erie - Crawford**

**09 0200EST  
1800EST 0 0 100K Strong Wind**

The remnants of Tropical Storm Frances moved northeast across the Upper Ohio Valley on September 8th. Gusty northerly winds behind this storm caused damage in extreme northwestern Pennsylvania. A peak gust of 47 mph was measured at Erie International Airport. Many trees were downed in both Erie and Crawford Counties. A couple homes in Erie County sustained minor wind damage.

### PAZ003

#### **Crawford**

**09 0830EST  
11 1200EST 0 0 2M Flood**

Runoff from heavy rains associated with the remnants of Tropical Storm Frances caused French Creek in Meadville to rise to its highest level in 45 years. The creek climbed above the flood stage of 14 feet around daybreak on September 9th. The river crested at 16.36 feet around 10 a.m. on the 10th. This level was the highest non-ice affected crest on record. The river finally went below flood stage at midday on the 11th. Damage along the creek was extensive. Meadville's Fifth Ward was especially hard hit with hundreds of homes and businesses damaged. The flooding was particularly bad along Spring Street, Lincoln Avenue and Columbia Street. All but one road leading into Meadville had to be closed because of the flooding. Flood waters in some neighborhoods were as much as 4 to 5 feet deep. Over 1,200 homes were damaged in Crawford County from the flash flooding on 9th and the flooding along French Creek the successive days. In Meadville alone, nine mobile homes were destroyed with 34 houses and five businesses sustaining major damage. See the Flash Flood event description of September 9th for more damage estimates.

### PAZ001>003

#### **Northern Erie - Southern Erie - Crawford**

**17 1030EST  
18 0200EST 0 0 575K Flood**

For the second time in a week, extensive urban and lowland flooding was reported across Erie and Crawford Counties. The remnants of Ivan moved across the Ohio Valley on September 17th. A stationary front extending northeast from the low caused heavy rains to develop and fall on most of northwestern Pennsylvania from late on September 16th through the daylight hours of the 17th. Rainfall totals for the storm in Crawford County included: 1.36 inches at Cambridge Springs; 1.77 inches at the Meadville Airport and 2.00 inches at Union City. In Erie County rain totals were: 1.30 inches at Edinboro; 1.44 inches at Erie International Airport and 2.1 inches at Cranesville. Runoff from this rain caused many streams and creeks to leave their banks flooding many low lying areas. Many roads had to be closed because of the flooding. At Meadville, French Creek rose rapidly but crested below the flood stage of 14 feet. Hundreds of homes in both Erie and Crawford Counties sustained damage from lowland or basement flooding.

## PENNSYLVANIA, West

### PAZ020

#### **Beaver**

**08 1630EST  
10 0000EST 0 0 4M Flood**

Rain from the remnants of Hurricane Frances began early on the 8th and ended by dawn on the 9th. By 540 PM EDT on 8th, many roads were closed by flooding countywide, including Center and Chippewa Townships. By 1030 PM on 8th, many roads flooded, especially in Darlington and Hopewell from Connoquenessing Creek. At this time, the Hopewell shopping plaza began to flood. By 9 AM EDT on 9th, in Bridgewater, 80 boats broke lose from their dock. Later, nearly 250 boats were seen piled up against a bridge. At time unknown, there were mud slides on Rte 18 in Potter Twp, and Rte 68 near Shippingport. By the end of the storm, 300 homes were damaged across the county; 35 roads were flooded, and 39 towns were flooded. Total rain: 4" in Beaver. (FRANCES)

# Storm Data and Unusual Weather Phenomena

September 2004

		Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	September 2004	
Location	Date				Killed	Injured	Property	Crops	Character of Storm
<b>PENNSYLVANIA, West</b>									
<b>PAZ029</b>	<b>Washington</b>								
	<b>08</b>	<b>1800EST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Flood</b>
	<b>09</b>	<b>0000EST</b>							
By 750 PM EDT, 30 basements were flooded countywide, some to a depth of 2 feet. In Hanover Twp, North Kings Creek Rd was washed out in part (time unknown). Both Hickory and Eight-four reported 2.6 inches of rain. (FRANCES)									
<b>PAZ021</b>	<b>Allegheny</b>								
	<b>08</b>	<b>1800EST</b>			<b>0</b>	<b>0</b>	<b>40K</b>		<b>Flood</b>
	<b>10</b>	<b>0500EST</b>							
By 7 PM EDT on 8th, Wexford Run flooded in Ross Twp; Babcock Blvd flooded in McCandless Twp; creeks were flooding Shaler Twp; Streets Run Rd was flooded in Baldwin. By 948 PM, people were being evacuated in Bell Acres because of flooding after 6 inches of rain. By 1146 PM EDT on 8th, parts of Sewickley were being evacuated. About 1 AM EDT on 9th, in Etna, Pine Creek began to flood and 50 people were evacuated. Many basements flooded. Other 24-hr rainfalls: 4.5" Westview; 4.2" Moon Twp; 3.6" Pittsburgh Airport (record 1 day rainfall). Most small stream flooding ended by 8 AM EDT on the 9th, but the Allegheny River at Acmetonia (C W Bill Young Dam) rose to the flood stage of 17 ft for a few minutes around 6 AM EDT on the 10th. The remnants of Frances passed over the Pittsburgh airport at 230 AM EDT on the 9th. (FRANCES)									
<b>PAZ014</b>	<b>Butler</b>								
	<b>08</b>	<b>1818EST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Flood</b>
	<b>10</b>	<b>0000EST</b>							
Basement flooding began at 718 PM EDT on 8th. At 827 PM, Dinnerbell Rd flooded in Saxonburg. By 10 PM, evacuations began west of Butler. By 8 AM on 9th, roads were still closed near Butler; and people were evacuated in Evans City and Harmony. There was flooding in Jackson Twp and 3 other townships. Connoquenessing Creek flooded Zelienople (time unknown). In total, 30 roads were closed by flood. Total rain: 3.2" in Sarver. (FRANCES)									
<b>PAZ032</b>	<b>Fayette</b>								
	<b>08</b>	<b>1818EST</b>			<b>0</b>	<b>0</b>	<b>15K</b>		<b>Flood</b>
		<b>2200EST</b>							
Basements flooded in Redstone and Uniontown. Chalkhill reported 2.4 inches of rain. (FRANCES)									
<b>PAZ008</b>	<b>Venango</b>								
	<b>08</b>	<b>1818EST</b>			<b>0</b>	<b>0</b>	<b>50K</b>		<b>Flood</b>
	<b>10</b>	<b>0200EST</b>							
By 718 PM EDT on 8th, basements were flooded in Cranberry. By 922 PM, Mercer and Addams Roads flooded in Polk; Cherry Tree Rd and Rte 417 flooded near Franklin; and Rte 8 north of Oil City was flooded. By 8 AM on the 9th, French Creek and Sugar Creek were still out of their banks northwest of Franklin; and 50 basements had been flooded throughout the county. Total rain: 3.2" in Polk. (FRANCES)									
<b>PAZ007</b>	<b>Mercer</b>								
	<b>08</b>	<b>1830EST</b>			<b>0</b>	<b>0</b>	<b>200K</b>		<b>Flood</b>
	<b>10</b>	<b>0700EST</b>							
At 730 PM EDT on 8th, State Rte 258 was closed by flood near Mercer. As of 9 AM on 9th, widespread flooding continued. At Jamestown, 12 families were evacuated as a precaution because of a dam (time unknown); the dam did not fail. Total rain: 4 inches in Mercer. There was a record flood on the Shenango River at Transfer, which crested at 10.65 ft at 11 AM EDT on 9th (previous record 10.47). (FRANCES)									
<b>PAZ013</b>	<b>Lawrence</b>								
	<b>08</b>	<b>1900EST</b>			<b>0</b>	<b>0</b>	<b>40K</b>		<b>Flood</b>
	<b>10</b>	<b>0700EST</b>							
By 859 PM EDT on 8th, several roads were closed by flood near New Castle, including Rtes 18 and 108. By 1145 PM, numerous roads were flooded countywide; and 30 people evacuated in North Beaver Twp. By 9 AM EDT on 9th, flooding was still widespread. In all, basements flooded, 30 roads were flooded; 100 people evacuated, including 3 trailer parks; one road washed away. There was a record flood on Slippery Rock Creek at Wurtemburg, which crested at 9.48 ft at 11 PM EDT on 9th (previous record 8.09). (FRANCES)									
<b>PAZ015</b>	<b>Clarion</b>								
	<b>09</b>	<b>0032EST</b>			<b>0</b>	<b>0</b>	<b>25K</b>		<b>Flood</b>
	<b>10</b>	<b>0700EST</b>							
At 132 AM EDT on 9th, Rte 208 flooded near Shippenville; Huey Rd flooded 4 miles south of Sligo; and Rte 58 flooded 6 miles west of Sligo. Some roads were still flooded as of 8 AM EDT on 9th. Clarion River at Cooksburg (northeast corner of Clarion Co) rose to flood stage (13 ft) at 4 PM EDT on 9th; crested at 13.4 at 6 PM on 9th; and fell below flood stage 11 PM EDT on 9th. (FRANCES)									
<b>PAZ022</b>	<b>Armstrong</b>								
	<b>09</b>	<b>2245EST</b>			<b>0</b>	<b>0</b>			<b>Flood</b>
		<b>2259EST</b>							



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, West**

### **PAZ029**

Allegheny River at Mosgrove rose to flood stage (19 feet) briefly from 1145 PM EDT to 1159 PM EDT on the 9th. (FRANCES)

#### **Washington**

<b>17</b>	<b>1215EST</b>	<b>0</b>	<b>0</b>	<b>5.1M</b>	<b>Flood</b>
<b>18</b>	<b>1200EST</b>				

Rain from the remnants of Hurricane Ivan started during the night of the 16th, and continued into the evening of the 17th. At 115 PM EDT on 17th, roads flooded in Canonsburg and Washington. At 206 PM, there was widespread stream flooding in Burgettstown, McDonald, and Midway. At 217 PM, Houston flooded. 315 PM, Rtes 50 and 980 were flooded in Avella and Cecil. 5 PM, mud slides in Peters Twp, which had 4" of rain. By 8 PM, Washington 5" of rain. Total of 961 structures damaged or destroyed. Towns hard hit: Avella, Burgettstown, Cecil, Independence, Peters, Washington. Many roads closed by mud slides or flooded. Trailer park in Canton washed away. Some trailer park residents were trapped atop their mobile homes until dark, asking for help by signaling SOS with their flashlights. Other mobile homes destroyed. Houses lifted off foundations; railroad track beds gone; several roads washed out, including Rte 19 near Houston; grocery store destroyed. 11 boats, docked in Millsboro, damaged. Total rain: 5.9" in Canonsburg. (IVAN)

### **PAZ021**

#### **Allegheny**

<b>17</b>	<b>1224EST</b>	<b>1</b>	<b>92</b>	<b>26M</b>	<b>Flood</b>
<b>19</b>	<b>0730EST</b>				

At 124 PM EDT on 17th, road flooding was reported 2 miles west of Pittsburgh. At 2 PM, Wexford flooded. At 218 PM, roads flooded in Oakdale. By 315 PM, Springdale Boro flooded; and Wexford had 4.5" of rain. . By 450 PM on 17th, in Tarentum, Mill St and Davidson St were flooded; people evacuated. By 5 PM EDT on 17th, a state of emergency was declared in 62 of the 130 municipalities of Allegheny Co. South Park 6" of rain 530 PM EDT 17th. At 6 PM, evacuations in Tarentum. Widespread flooding stranded thousands. A total of 9494 homes, 1060 businesses, 4 schools, 9 fire depts, 50 public buildings damaged or destroyed. 140 boats broke away and ran away down several rivers. Some towns flooded, include: Bridgeville, Carnegie (by Chartiers Creek, starting 415 PM), Etna, Millvale, Sharpsburg, Shaler (by Little Pine Creek), South Fayette, Tarentum, West Deer. In Carnegie, 22 people were trapped on a bridge as flood waters rose and surrounded them. They tied themselves together and waited for rescue. These roads partly washed out: Oakdale Rd, Brocktown Rd, Boyds Run Rd, Dorrington Rd, Millers Run Rd, Noblestown Rd. Total rain: 6.6 inches Franklin Park, 6.4 Moon Twp. Pittsburgh International Airport set a new record for 1-day rainfall of 5.95 inches. This broke the old record (3.6") set during FRANCES on Sept 9. The Allegheny River flooded, from Freeport to Sharpsburg, from 11 PM EDT on 17th, until 5 AM EDT on 19th. Here are city, flood stage, crest, time: Freeport (flood stage 23 ft), 24.1 10 AM 18th; Natrona (21 ft), 24.2 11 AM 18th; Acmetonia (17), 19.8 1 PM 18th; Sharpsburg (21), 22.1 4 PM EDT 18th. The Ohio River flooded, from Pittsburgh to Dashields, from 10 PM on 17th, until 830 AM EDT on 19th. Pittsburgh (flood stage 25 ft), crested 31.0 at 4 PM EDT on 18th; Dashields (25 ft), crested 29.9 at 8 PM on 18th. On the Youghiogheny River, Sutersville rose above flood stage (20 ft) 1 PM on 18th, crested 20.7 at 430 PM, and fell below flood stage at 730 PM EDT on 18th. The remnants of Ivan made its closest approach to Pittsburgh at 7 PM EDT on the 17th. (IVAN)

M35OU

### **PAZ007**

#### **Mercer**

<b>17</b>	<b>1300EST</b>	<b>0</b>	<b>0</b>	<b>66K</b>	<b>Flood</b>
<b>18</b>	<b>0000EST</b>				

At 2 PM EDT on 17th, Rte 18 was closed by flood north of Greenville. Some flooding continued beyond 8 PM EDT on 17th. (IVAN)

### **PAZ013**

#### **Lawrence**

<b>17</b>	<b>1330EST</b>	<b>0</b>	<b>0</b>	<b>265K</b>	<b>Flood</b>
<b>19</b>	<b>0900EST</b>				

At 236 PM EDT on 17th, numerous roads were flooded in Pulaski and Shenango townships. By 845 PM, Ellwood City had 3.5 inches of rain. As of 6 PM on 18th, many roads were still flooded, and there were a few mud slides, including one on Vanguard Rd in Perry Twp. Part of Mohawk School Rd washed out. (IVAN)

### **PAZ014**

#### **Butler**

<b>17</b>	<b>1345EST</b>	<b>0</b>	<b>0</b>	<b>3.1M</b>	<b>Flood</b>
<b>19</b>	<b>0600EST</b>				

At 245 PM EDT on 17th, flooding began in Sarver. At 315 PM, Butler reported 3" of rain. At 445 PM, flooding occurred in Butler. State of emergency declared 5 PM EDT 17th. By 6 PM, 4.3" of rain in Penn Twp. Harmony and Jackson townships hardest hit. Part of Monroe Rd in Buffalo Twp washed out. Total of 588 structures damaged or destroyed. Record flooding along Connoquenessing Creek. Zelenople crested at 18.17 ft (previous record 16.66) Total rain: 6.1" at Butler Jr High School, 5.4" in Sarvar. (IVAN)

### **PAZ030**

#### **Westmoreland**

<b>17</b>	<b>1400EST</b>	<b>0</b>	<b>0</b>	<b>5M</b>	<b>Flood</b>
<b>18</b>	<b>1830EST</b>				

By 3 PM EDT on 17th, 911 started receiving flood calls. By 353 PM, streams overflowed and flooded Vandergrift. 417 PM, Greensburg Rd closed by flood in New Kensington. 5 PM, Irwin had 2.5" of rain. 534 PM, roads flooded 1 mile southwest of Apollo. 548 PM, 1 house evacuated near a previously damaged dam in Allegheny Twp; and New Kensington 6" of rain. 606 PM, Freeport Rd flooded 1 mile south of Tarentum; people being evacuated. Roads closed, included Rte 30, 381, 982. Total of 819

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **PENNSYLVANIA, West**

homes and businesses, and 75 public structures damaged or destroyed. Ligonier sewage treatment plant damaged. Many basements were flooded by Youghiogheny River when Sutersville rose above flood stage (20 ft) at 1 PM EDT on 18th, crested 20.7 at 430 PM 18th, and fell below flood stage 730 PM 18th. On the Conemaugh River, Seward rose above flood stage (12 ft) at 11 AM 18th, crested 12.1 at 11 AM, and fell below flood stage 1 PM EDT 18th. Total rain: 6.3" in Monesson, 6.1 Delmont, 6 inches New Kensington. (IVAN)

**PAZ020**

### **Beaver**

17	1415EST	0	0	4M	Flood
19	1600EST				

At 325 PM EDT on 17th, Rte 30, and all roads in Industry closed by flooding. Much damage along Rte 68 corridor in western part of county. Bridgewater and Glasgow flooded. Total of 625 structures damaged or destroyed, including 43 businesses, mainly in Hopewell Twp. Hundreds of runaway boats were lost, but 93 were recovered. Several marinas were ripped from the shore and broke up as they slammed into bridges, with numerous boats still attached. Roads partly washed out: Rtes 65, 288, 588, Hoenig Rd, Hartzell School Rd, Shady Rest Rd, Franklin Rd, Green Garden Rd. On the Ohio River, Montgomery Dam rose to flood stage (33 ft) at 4 AM EDT on 18th, crested 41.0 at 10 PM 18th, and fell below flood stage 2 PM EDT on 19th. Total rain: 4 inches in Monaca. (IVAN)

**PAZ022**

### **Armstrong**

17	1430EST	0	1	4M	Flood
18	2000EST				

By 4 PM EDT on 17th, a courthouse was threatened by a mud slide in Kittanning; and numerous roads were flooded countywide, including Rte 66 between Ford City and Leechburg. By 11 PM, Bradys Bend had 5.7 inches of rain; and Red Bank Creek, on the border of Armstrong and Clarion counties, continued to flood. St Charles on the Red Bank Creek crested around 17.9 ft around dawn (flood stage 17). On the Clarion River, Cooksburg rose above flood stage (13 ft) at 2 AM EDT on 18th, crested 16.5 at 8 AM on 18th, and fell below flood stage 8 PM EDT 18th. The Allegheny River rose above flood stage 4 AM EDT 18th, and fell below flood stage by 9 PM EDT on 19th. Here are city, flood stage, crest, and time: Rimer (19 ft), 19.5 at 10 AM 18th; Mosgrove (19), 20.4 at 10 AM 18th; Kittanning (21), 22.2 at 9 AM EDT 18th; Freeport (23), 24.1 at 10 AM EDT on 18th. Crooked Creek at Idaho had a record crest of 19.33 ft at 8 AM on 18th (previous record 18.6). Buffalo Creek at Freeport had a record crest of 15.28 at 8 PM on 17th (previous record 13.6). Total of 56 structures damaged or destroyed, including 3 businesses and 1 church. (IVAN)

**PAZ008**

### **Venango**

17	1500EST	0	0	15K	Flood
18	1200EST				

At 4 PM EDT on 17th, Moon Run Rd flooded in Oil City. 656 PM, 3.1 inches of rain 5 miles east of Oil City. (IVAN)

**PAZ015**

### **Clarion**

17	1510EST	0	0	2M	Flood
18	1900EST				

At 410 PM EDT on 17th, Rte 66 closed by flood in Shippenville. New Bethlehem, Hawthorn, East Brady, and Sligo also flooded. At 646 PM on 17th, there was a mud slide on the south side of New Bethlehem. Rte 58 also flooded. On the Clarion River, Cooksburg rose above flood stage (13 ft) 2 AM EDT on 18th, crested 16.5 at 8 AM 18th, and fell below flood stage 8 PM EDT on 18th. Total of 117 homes and businesses, and 155 public roads, damaged or destroyed. Total rain: 3.5 inches in East Brady. (IVAN)

**PAZ031**

### **Greene**

17	1600EST	0	0	6.1M	Flood
18	1700EST				

It started 5 PM EDT 17th, when Graysville flooded, according to newspaper accounts. By 740 PM on 17th, there was widespread road and stream flooding countywide, including all roads in and out of Greensburg; Rte 21 in Franklin Twp; and Rte 18 in Centre Twp. Total of 157 homes and 46 businesses damaged or destroyed. Total rain: about 5 inches. (IVAN)

**PAZ016**

### **Jefferson**

17	1638EST	0	0	478K	Flood
19	1200EST				

At 538 PM EDT on 17th, roads flooded, in Warsaw Twp, 7 miles north of Brookville after 3.3 inches of rain. By 6 PM, there was widespread road and stream flooding. At least 5 people were rescued from their vehicles. By 8 PM, Rockdale had 4" of rain. By 9 PM, Punxsutawney had 4.5 inches. Mahoning Creek at Punxsutawney crested at 32.3 ft (flood stage 32) around 1 PM EDT on 18th. (IVAN)

**PAZ023**

### **Indiana**

17	1730EST	0	0	1.5M	Flood
19	0000EST				

At 630 PM EDT on 17th, Curry Run overflowed and closed Rte 422 near Shelocta (newspaper). By 720 PM, there was widespread road and stream flooding. Flood waters swept away 8 empty campers at a camp ground between Shelocta and Elderton. 845 PM, numerous roads closed by flood. At one house in Centre Twp, basement wall caved in. Rte 954 near Beyer was washed out. Rte

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## PENNSYLVANIA, West

4018 near Smicksburg closed when Mahoning Dam overflowed. Indiana had 3.5 inches of rain. By 1050 PM, Clymer flooded and people were evacuated. 150 people had to be evacuated countywide. Shelocta hit hard. Total of 339 structures damaged or destroyed, 40 of them were businesses. (IVAN)

### PAZ009

#### Forest

17	2000EST	0	0	50K	Flood
18	1900EST				

At 9 PM EDT on 17th, roads and a bridge covered by water near Tionesta. On the Clarion River, Cooksburg rose above flood stage (13 ft) at 2 AM EDT on 18th, crested 16.5 at 8 AM 18th, and fell below flood stage at 8 PM EDT on 18th. (IVAN)

## PUERTO RICO

### Mayaguez And Vicinity Mayaguez

07	1420AST	0	0		Heavy Rain
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Heavy rain and pea sized hail were reported at Barrio Miradero.

### Western Interior Adjuntas

07	1520AST 1606AST	1	0	15K	Flash Flood
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A near severe thunderstorm drifted over Adjuntas during the afternoon causing heavy rainfall which caused the loss of a life as river Yayaes, a small tributary of river Guilarte, surged out of its banks and flowed across the intersections of roads 131 and 135. A 59 year old woman drove a car into the moving waters, attempted to escape her car and was drowned. F59VE

### PRZ003-007-007-007

#### Southeast - Ponce And Vicinity

08	0400AST 2359AST	0	0	8K	Heavy Surf/High Surf
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Coastal flooding was reported at Playita Cortada in the municipality of Santa Isabel. Three families were relocated to higher ground.

### PRZ003

#### Southeast

08	0800AST 2000AST	0	0	10K	Heavy Surf/High Surf
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Coastal flooding occurred along the coastal sector of Salinas, as the high surf generated by Hurricane Ivan when it was over 300 miles south of Puerto Rico, washed ashore, rocks and debris, which blocked the traffic along coastal highway 109, at barrio Las Ochenta, leading from Salinas to Guayama. The road remained closed for a period of 12 hours.

### Mayaguez And Vicinity Hormigueros

08	1600AST 2359AST	0	0		Heavy Rain
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Several areas were reported flooded in the municipality of Hormigueros, road 319, the San Jose Lavandero community, road 114 at Valle Hermoso Sur. Around 4 inches of rain fell in Hormigueros during the afternoon. Landslides were reported at Pareas San Romulado Norte, Camino Oscar Barbosa, road 345.

### Mayaguez And Vicinity Mayaguez

08	1600AST 2359AST	0	0		Heavy Rain
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Flooding was reported in Mayaguez, Del Carmen Street at Barrio Santurce, Barrio Rio Hondo, Wilson Street at Parcelas Castillo, Badiz and Nenadich Streets. Landslides were reported at Camino Rosa, road 348, and the bridge at Puente de Camino Juan Lebron was affected by the rains.

### PRZ003

#### Southeast

08	1915AST 2359AST	0	0	2K	Heavy Surf/High Surf
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Coastal flooding was reported in Barrio Guardarraya along Highway 3 in the municipality of Patillas.

### PRZ001>013

#### San Juan And Vicinity - Northeast - Southeast - Eastern Interior - North Central - Central Interior - Ponce And Vicinity - Northwest - Western Interior - Mayaguez And Vicinity - Southwest - Culebra - Vieques

14	1600AST	4	1	68M	101.5M	Tropical Storm
17	2359AST					

Tropical Storm Jeanne and its associated weather affected Puerto Rico, Vieques and Culebra from Sep. 14-17. On its wake it left considerable damages to the electric power grid, the water supply system, highways and roads, bridges, schools, individual households, businesses and commerce due to extensive flooding, landslides and mudslides. Jeanne forced 3,629 people living in flood zones to seek refuge in shelters. Jeanne caused eight deaths in Puerto Rico, four direct and four indirect. One death direct death was in the municipality of Yabucoa, where the winds tore the roof and ceiling of a house to which a hammock was attached, flung a person from the hammock and smashing her into the wall of an adjacent structure. Another, and the only one flood related fatality was reported in the municipality of Moca, where a person was reportedly drowned in a tributary stream of River Culebrinas. Two other persons died and one was injured after a tree damaged by winds fell on an automobile in a rural road of Yauco the

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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## PUERTO RICO

Saturday after the storm. Two other persons died due to carbon monoxide poisoning from generators running in closed spaces without proper ventilation. The island road system was widely impacted as 302 roads had to be closed due to fallen trees, landslide and mudslides or debris. Damages to the electrical grid were estimated at 60 million, and to the water system at 8 million. Tropical Storm Jeanne made landfall as a strong tropical storm over southeast Puerto Rico around noon time on Sep. 15. Official winds reports from the International airport in Carolina were of sustained winds of 49 mph with a gust to 71 mph. An unofficial report from a spotter in Salinas indicated sustained winds of 63 mph with gust to 71 mph at 1140 am AST. Another unofficial report of a wind gust to 68 mph was recorded at Palmas del Mar, Humacao, and the Arecibo Observatory, which recorded a wind gust of 70 mph at an elevation of 1,200 feet on Sep 15. The agricultural impact was significant, the hardest hit areas were the south and east. Damages were estimated at 101.5 million, 55 million were attributed to the banana and plantain sectors. More than 15,500 acres of plantain and banana farm lands were affected. Hardest hit crops were coffee, plantain, banana and wheat. The hydrological impact of Jeanne were widespread and diverse with major stream and river flooding. The island of Vieques recorded 23.75 inches of rain over three days, and 14.75 inches in a 24 hour period which corresponded to more than a 100 year return period. Other municipalities in Puerto rico received from 11 to 18 inches over the three day period ending on Sep. 17 at 800 am AST. The highest return frequency over inland Puerto Rico was at Aibonito, where the 24 hour rainfall of 15 inches corresponded to more than a 100 year event. F47PH, M37VE, M41VE, M45OU

### **Mayaguez And Vicinity**

Anasco	16	0245AST 0645AST			0	0			Flash Flood
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River Rio Grande de Añasco was reported out of its banks.

### **San Juan And Vicinity**

San Juan	21	1500AST			0	0			Funnel Cloud
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Funnel cloud reported between Roosevelt and Piñeiro Avenues.

### **San Juan And Vicinity**

Carolina	22	1535AST			0	0			Heavy Rain
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Urban flooding was reported at Parque Escorial. Standing water knee high in some places and as high as some car doors in spots.

### **Ponce And Vicinity**

Ponce	28	1500AST			0	0			Heavy Rain
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Heavy rains, pea size hail and strong gusty winds were reported at Barrio Punta Diamante in the municipality of Ponce. Winds gusts were estimated between 40 and 50 mph.

## RHODE ISLAND

NONE REPORTED.

## SOUTH CAROLINA, Central

### **Calhoun County**

7 NE St Matthews to 7.5 NE St Matthews	07	0220EST 0223EST	0.5	100	0	0	0	0	Tornado (F0)
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NWS survey along with dept. of highways, found trees down across US601 from a small tornado.

### **Calhoun County**

2 SE Ft Motte	07	0337EST			0	0	0	0	Thunderstorm Wind (G55)
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Hwy Dept. reported trees down on SC 419.

### **Richland County**

1.5 SE Gadsden to 1 NW Gadsden	07	0346EST 0348EST	2.5	440	0	3	100K	0	Tornado (F2)
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NWS survey found 3 mobile destroyed, several others damaged along with a couple of businesses. Three people were injured. Numerous trees and powerlines down.

### **Richland County**

Ft Jackson	07	0425EST 0428EST	1	200	0	0	300K	0	Tornado (F1)
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Ft. Jackson reported 22 homes with light to moderate damage from an F1 tornado.

### **Richland County**

1 SE Columbia to .5 SE Columbia	07	0517EST 0518EST	0.5	100	0	0		0	Tornado (F0)
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An F0 took down some trees on Bluff and Blackberry roads.

### **Barnwell County**

Barnwell	07	0535EST 0536EST	0.5	100	0	0		0	Tornado (F0)
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An F0 took down some trees and powerlines and damaged some signs in Barnwell.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>SOUTH CAROLINA, Central</u></b>									
<b>Aiken County</b>									
5 SE Monetta to 4.5 SE Monetta	07	0614EST 0615EST	0.5	100	0	0	0	0	Tornado (F0)
An F0 tornado took down some trees on hwys 39 and 391.									
<b>Sumter County</b>									
3 SW Sumter to 2 W Sumter	07	0628EST 0738EST	4	500	0	3	1.7M		Tornado (F2)
Emergency manager reported 55 homes damaged, 9 destroyed, and 3 injuries.									
<b>Calhoun County</b>									
Countywide	07	0700EST 0900EST			0	0			Flash Flood
Sheriff reported some secondary roads beginning to flood with some closures.									
<b>Richland County</b>									
1 SE Columbia	07	0712EST 0900EST			0	0			Flash Flood
Sheriff reported heavy rains and flooding of roads in southeast Columbia and outskirts with some closures.									
<b>Lee County</b>									
3 S Manville to 4 SW Manville	07	0740EST 0748EST	4	440	0	0			Tornado (F1)
A strong F1 tornado took down huge trees and powerlines, and also did moderate damage to several homes and a cotton gin mill.									
<b>Lee County</b>									
2 SW Bishopville to 2 WSW Bishopville	07	0810EST 0812EST	0.5	100	0	0		0	Tornado (F0)
Storm Chaser reported an F0 did minor damage to a mobile home and took down some trees and powerlines.									
<b>Kershaw County</b>									
5 ESE Camden to 5 E Camden	07	0818EST 0824EST	3	400	0	0			Tornado (F0)
Intermittent touchdown of an F0 took down trees and powerlines in and around Antioch with minor damage to some mobile homes.									
<b>Kershaw County</b>									
2 SE Cassatt to 3 NW Cassatt	07	0835EST 0845EST	5	440	0	0			Tornado (F1)
An F1 tornado did moderate damage to several homes and mobile homes. A turkey farm also had light damage.									
<b>Calhoun County</b>									
6 SW St Matthews to 5.5 SW St Matthews	07	0848EST 0849EST	0.5	100	0	0		0	Tornado (F0)
Dept of highways reported an F0 took down some trees and powerlines on Sc 453.									
<b>Clarendon County</b>									
2 SW Paxville to 2.5 WSW Paxville	07	0848EST 0849EST	0.5	100	0	0	0	0	Tornado (F0)
Survey found an F0 path a half mile long which took down trees.									
<b>Sumter County</b>									
Shaw Afb to 2.5 N Shaw Afb	07	0903EST 0909EST	3	400	0	0		0	Tornado (F1)
Shaw AFB reported many homes with light damage and a few with moderate damage as an F1 touched down between the runways and moved across the base. Many trees and powerlines were also down.									
<b>Lancaster County</b>									
Rich Hill Xrds to 2 NW Rich Hill Xrds	07	0940EST 0944EST	2	300	0	0		0	Tornado (F1)
A strong F1 did moderate to severe damage to buildings on a turkey farm. Several mobile and structural homes were also damaged along the path.									
<b>Kershaw County</b>									
2 NE Camden to 7 N Camden	07	1015EST 1029EST	7	880	0	1			Tornado (F3)
An F3 tornado demolished several mobile homes and severely damaged cinder block horse stables at a horse farm. A large horse trailer was lifted up and placed on top of the stable. Several outbuildings were destroyed and numerous trees and powerlines were down.									
<b>Chesterfield County</b>									
7 SSE Cheraw to 1 NNW Cheraw	07	1140EST 1156EST	8	440	0	0		0	Tornado (F1)
An F1 intermittently touched down and did minor damage to several homes, businesses, and an elementary school.. Numerous trees and powerlines were down.									
<b>Orangeburg County</b>									
5 SE Cope to 4.5 SE Cope	07	1145EST 1146EST	0.5	100	0	0	0	0	Tornado (F0)
An F0 took down some trees along Cannon Bridge road.									

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Local Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Damage Crops	Character of Storm
<b><u>SOUTH CAROLINA, Central</u></b>									
<b>Chesterfield County</b>									
13 ESE Patrick to 13 E Patrick	07	1450EST 1452EST	1	150	0	0	0	0	Tornado (F0)
									An F0 took down trees along hwy 52 north of Society Hill as the tornado dissipated.
<b>Fairfield County</b>									
Jenkinsville to 6 W Winnsboro	07	1500EST 1532EST	16	400	0	0			Tornado (F0)
									An F0 intermittently touched down and took down trees from Jenkinsville to the Greenbrier Community.
<b>Bamberg County</b>									
1 E Ehrhardt to 1.5 NE Ehrhardt	07	1520EST 1522EST	0.5	100	0	0		0	Tornado (F0)
									Emergency manager reported trees and powerlines down along path.
<b>SCZ016-030&gt;031</b>									
		<b>Chesterfield - Aiken - Sumter</b>							
	07	1630EST			0	0		0	Tropical Storm
	08	0835EST							
									Emergency manager reported a tree on a home 5SSE of Chesterfield and shingles of a home.
<b>Chesterfield County</b>									
8 E Mc Bee to 9 NE Mc Bee	07	1923EST 1937EST	7	440	0	5		0	Tornado (F2)
									An F2 destroyed 2 mobile homes and did moderate to severe damage to several others. Numerous trees and powerlines were down.
<b>Newberry County</b>									
Macedonia	07	2155EST			0	0	0	0	Thunderstorm Wind (G50)
									Highway Dept. reported several trees down.
<b>Aiken County</b>									
Aiken Muni Arpt	16	1354EST			0	0	0	0	Funnel Cloud
									Pilot at Aiken airport sighted a funnel cloud moving north.
<b>Aiken County</b>									
4 N Aiken to 10 N Aiken	16	1356EST 1408EST	6	75	0	0	0	0	Tornado (F0)
									Sheriff and Emergency manager reported trees down along the path of an F0 tornado that intermittently touched down. Trees were down from I-20 just south of US1 to 3 miles South of Ridge Spring on SC511 which is Pitts Branch road.
<b>Saluda County</b>									
5 NNE Saluda to 10 N Saluda	16	1500EST 1512EST	6	400	0	1			Tornado (F1)
									Storm survey found numerous trees and powerlines down, light to moderate damage to several mobile homes, a 2 story barn destroyed, 2 trees on cars, and light to moderate roof damage to several framed homes.
<b>Fairfield County</b>									
3 NE Winnsboro	17	0530EST			0	0	0	0	Thunderstorm Wind (G50)
									Highway dept. reported several trees down on SC200 northeast of town.
<b>Clarendon County</b>									
3 W Alcolu to Alcolu	27	0923EST 0929EST	3	400	0	4		0	Tornado (F1)
									An F1 tornado destroyed 2 mobile homes and damaged several others. Light to moderate damage occurred to the elementary school and its busses. Severe damage occurred to large open air outbuildings at a mill across the street from the school.
<b>Aiken County</b>									
9 NE Aiken to 11 NNE Aiken	27	1239EST 1245EST	3	100	0	0		0	Tornado (F0)
									An F0 did moderate damage to a barn, camper, and roof of a home.
<b>Lee County</b>									
Bishopville to Lucknow	27	1303EST 1315EST	6	80	0	0		0	Tornado (F0)
									An F0 touched down in Bishopville then again in the Lucknow area. Trees and powerlines were down with minor damage to a couple of homes.
<b>Chesterfield County</b>									
4 S Chesterfield to 1 S Chesterfield	27	1330EST 1336EST	3	120	0	0		0	Tornado (F0)
									An F0 took down trees, severely damage some wood framed outbuildings and did minor damage to a couple of mobile homes.
<b>Saluda County</b>									
7 N Ridge Spg	27	1404EST			0	0	0	0	Funnel Cloud
									Sheriff reported a funnel north of Ridge Springs.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## SOUTH CAROLINA, Central

<b>Saluda County</b> Countywide	27	1421EST			0	0	0	0	Thunderstorm Wind (G50)
									Highway dept. reported scattered trees down around the county.
<b>Saluda County</b> 8 NW Saluda to 9 NNW Saluda	27	1539EST 1543EST	2	80	0	0	0	0	Tornado (F0)
									An F0 touched down along Old Chappells road taking down trees.
<b>Newberry County</b> Chappells	27	1600EST			0	0	0	0	Funnel Cloud
									Sheriff reported a funnel cloud over Chappells.
<b>Newberry County</b> 8 ENE Newberry to 10 ENE Newberry	27	1608EST 1614EST	3	220	0	0		0	Tornado (F1)
									Roof torn off home with 4 other homes damaged. Several outbuildings destroyed. Damage was on SC34, US 176, and Big Pine road.
<b>Lexington County</b> 10 WNW Lexington to 11 WNW Lexington	27	1630EST 1632EST	1	80	0	0	0	0	Tornado (F0)
									An F0 touchd down on Devils Backbone road in taking down trees which just missed several homes.
<b>Newberry County</b> .5 N Jalapa to 3 NNW Jalapa	27	1644EST 1650EST	3	100	0	0		0	Tornado (F0)
									An F0 touched down on Jalapa road and Indian Creek road taking down trees and doing minor damage to a couple of mobile homes.
<b>Orangeburg County</b> Springfield to Norway	27	1837EST			0	0	0	0	Thunderstorm Wind (G50)
									Sheriff reported trees down in the western part of the county.
<b>Lexington County</b> Gilbert to Lexington	27	1840EST 1850EST			0	0		0	Thunderstorm Wind (G50)
									Sheriff reported trees down in the Gilbert area and in Heritage Hills subdivision of Lexington.
<b>Richland County</b> Countywide	27	1924EST 1944EST			0	0		0	Thunderstorm Wind (G50)
									Sheriff reported scattered trees down around the county.
<b>Fairfield County</b> 3 NNW Ridgeway to 5 NNW Ridgeway	27	2008EST 2012EST	2	220	1	13		0	Tornado (F2)
									An F2 tornado destroyed 5 mobile homes, did moderate to severe damage to 2 framed homes and injured 13 people. One 57 year old male died. Two vehicles were moved 20 to 30 yards. M51MH

## SOUTH CAROLINA, North Coastal

<b>Darlington County</b> 2 SW Darlington to 1 SW Darlington	07	1135EST 1145EST	1.3	50	0	0	75K		Tornado (F0)
									A tornado snapped trees, some of which fell onto several homes and damaged roofs.
<b>Darlington County</b> 1 S Society Hill to 1 SE Society Hill	07	1210EST 1215EST	0.7	50	0	0	10K		Tornado (F0)
									Tornado snapped several trees, and caused damage to a roof of a home.
<b>Marlboro County</b> 4 SSE Clio to Clio	07	1305EST 1312EST	5	100	0	0	250K		Tornado (F1)
									Tornado snapped or uprooted numerous trees and damaged several homes.
<b>Marlboro County</b> 1 SW Mc Coll	07	1327EST 1330EST	0.3	25	0	0	60K		Tornado (F1)
									Tornado demolished a stalled mobile home.
<b>Darlington County</b> 7 NNE Darlington	07	1411EST 1412EST	0.1	30	0	0	8K		Tornado (F1)
									Tornado snapped several trees and damaged a mobile home.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>SOUTH CAROLINA, North Coastal</u></b>									
<b>Florence County</b>									
4 NE Florence to 4 N Florence	07	1645EST 1647EST	0.4	30	0	0	2K		Tornado (F0)
Tornado damaged a billboard and several trees next to a Petro truck stop. The tornado continued into Darlington county.									
<b>Darlington County</b>									
7 ESE Darlington to 7 E Darlington	07	1647EST 1650EST	0.6	30	0	0			Tornado (F0)
Tornado snapped numerous trees.									
<b>Dillon County</b>									
6 E Dillon to 5 NE Dillon	07	1811EST 1814EST	1.3	30	0	0	100K		Tornado (F0)
A tornado flattened and old barn and part of the roof of a shed was torn off. A few trees were snapped...one damaging a roof of a home.									
<b>Marlboro County</b>									
4 SW Bennettsville to 5 W Bennettsville	07	2005EST 2006EST	0.5	25	0	0	15K		Tornado (F0)
A tornado damaged a steel conveyor belt track at a sand and gravel mine. Several trees were snapped, and the roof of a front porch of a church was lifted off.									
<b>Florence County</b>									
Florence	16	1600EST 1605EST			0	0			Funnel Cloud
Public reported a funnel cloud near Ebenezer Road.									
<b>Darlington County</b>									
Hartsville	16	1640EST 1645EST			0	0			Funnel Cloud
A funnel cloud was reported near Old Camden Rd.									
<b>Georgetown County</b>									
1 N Murrells Inlet	25	1052EST			1	0			Rip Current
Strong rip currents caused by the swells from Hurricane Jeanne resulted in a drowning. Five other people had to be rescued by lifeguards. ??IW									
<b>Florence County</b>									
2 E Lake City to 2 NE Lake City	27	1105EST 1108EST	0.4	30	0	0	20K		Tornado (F1)
A tornado destroyed a barn and snapped trees. A house sustained minor damage.									
<b>Georgetown County</b>									
5 NW Carvers Bay to 7 NW Carvers Bay	27	1154EST 1205EST	1.6	30	0	0	30K		Tornado (F1)
A tornado snapped telephone poles, uprooted trees, and moved a mobile home off its foundation. The tornado also destroyed several sheds and outhouses.									
<b>Marion County</b>									
3 NE Peedee to 4 N Peedee	27	1325EST 1332EST	1.5	30	0	0	25K		Tornado (F1)
A tornado damaged two homes, and downed trees, powerlines, and sheds.									
<b>Dillon County</b>									
2 E Oak Grove	27	1352EST 1353EST	0.2	25	0	0			Tornado (F0)
A tornado downed trees along Interstate 95.									
<b>Marlboro County</b>									
Blenheim	27	1415EST	0.1	25	0	0			Tornado (F0)
A tornado touched down in a parking lot with no damage.									
<b>Florence County</b>									
Florence	27	2107EST 2300EST			0	0			Heavy Rain
Florence 911 reported widespread flooding of roadways. Some of the streets reported flooding include: Church St., Baroody St., Coit St., Sumter St., Evans St., Chase St., Alexander St., and the Cheves area.									
<b>Darlington County</b>									
Darlington	27	2112EST 2300EST			0	0			Heavy Rain
911 reported flooding on the roadways.									



# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
<b><u>SOUTH CAROLINA, Northwest</u></b>									
<b>Greenville County</b>									
Mauldin	01	1530EST 1600EST			0	0			Heavy Rain
A number of streets, especially Butler Rd., were partially closed because of high water produced by a thunderstorm which dropped 2 inches of rainfall very quickly.									
<b>York County</b>									
8 N Rock Hill to 9 N Rock Hill	07	1043EST 1045EST	1	100	0	0	5K		Tornado (F1)
This tornado touched down on the northeast side of Tega Cay and tracked almost due north into North Carolina. Damage was mainly limited to trees, but a few of these fell on homes and automobiles.									
<b>SCZ001&gt;003</b>									
<b>Oconee Mountains - Pickens Mountains - Greenville Mountains</b>									
	07	1100EST 2300EST			0	0	15K		High Wind (G50)
High winds associated with the remnants of Hurricane Frances produced some damage to trees and power lines across the South Carolina mountains.									
<b>SCZ003-006</b>									
<b>Greenville Mountains - Greater Greenville</b>									
	07	1630EST			0	0	15K		Flood
	08	0800EST							
An extended period of moderate to heavy rainfall associated with the remnants of Hurricane Frances resulted in gradual rises and eventual flooding along Gilder and Brushy Creeks, the Enoree River, and other streams on Greenville's east side. Overnight, the flooding expanded to include most of the remainder of the county.									
<b>SCZ001-004</b>									
<b>Oconee Mountains - Greater Oconee</b>									
	07	1700EST			0	0	1.3M		Flood
	08	0500EST							
Widespread flooding of creeks and streams developed across the county by early evening. Numerous roads were covered with water or washed out, and the sewer systems of several communities were damaged.									
<b>Anderson County</b>									
2 NE Sandy Spgs to 2 N Sandy Spgs	07	1830EST 1832EST	1.2	50	0	0	2K		Tornado (F0)
This tornado touched down just northeast of Sandy Springs, then moved northwest, uprooting several trees along its path. An aluminum cattle shelter was also destroyed.									
<b>Abbeville County</b>									
Abbeville	07	1900EST 2100EST			0	0	6K		Flash Flood
<b>Pickens County</b>									
Countywide	07	1900EST 2100EST			0	0			Flash Flood
<b>Greenville County</b>									
West Central Portion	07	1930EST 2230EST			0	0	8K		Flash Flood
<b>Anderson County</b>									
Anderson to Belton	07	2000EST 2200EST			0	0			Flash Flood
After an extended period of moderate to heavy rainfall, a tropical rain band produced intense rainfall rates that led to rapid rises along some creeks and small streams across portions of the Upstate during the mid-to-late evening. Streams affected by flash flooding included Blue Hill Creek in Abbeville and Broadway Creek between Anderson and Belton. Some evacuations occurred in Berea late in the evening, as the Reedy River rose above flood stage from Berea to downtown Greenville. A few roads were damaged across the area.									
<b>Chester County</b>									
10 SE Chester	07	1915EST 1916EST	0.5	50	0	0	100K		Tornado (F1)
This brief tornado blew down several trees and damaged or destroyed 2 small trailers shortly after touching down. It then moved north and lifted a portion of the roof from a well-constructed home. The garage wall was blown inward about 1 foot at this same location. A carport next to the home was also destroyed. Several trees were blown down and a small trailer destroyed at a hunting club before the tornado lifted.									
<b>Cherokee County</b>									
East Portion	07	2100EST 2200EST			0	0	23K		Flash Flood

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## SOUTH CAROLINA, Northwest

### Union County

#### Union

07	2100EST				0	0	250K		Flash Flood
08	0300EST								

After an extended period of moderate to occasionally heavy rainfall, intensifying rain rates led to rapid rises and flash flooding along some small creeks and streams in eastern portions of the Upstate. Several roads were covered with water in areas from Gaffney to Blacksburg due to flooding of Cherokee Creek and other small streams. However, flooding was most severe near the city of Union, where there was extensive damage to roads and bridges, including 2 bridges that were washed away. Several homes were also damaged.

### SCZ002-005

#### Pickens Mountains - Greater Pickens

07	2100EST				0	0	1.3M	5M	Flood
08	0800EST								

### SCZ010

#### Anderson

07	2200EST				0	0			Flood
08	0700EST								

After the flash flooding that developed earlier in the evening waned, general flooding continued across the county through the overnight hours, as numerous additional streams rose gradually to flood.

### SCZ007>008

#### Spartanburg - Cherokee

07	2200EST				0	0	40K		Flood
08	0700EST								

General flooding became widespread across portions of the Upstate late in the evening, as numerous streams rose gradually to flood. A mobile home park near Gaffney required evacuation overnight. The Pacolet River flooded in northern portions of Spartanburg County, especially areas around Landrum. Several roads and bridges were damaged.

### Union County

#### 6 E Union to 7 NE Union

07	2300EST	4	225		0	0	50K		Tornado (F1)
	2306EST								

This tornado touched down east of the city of Union, then tracked north/northwest, blowing down and uprooting numerous trees, and rolling one mobile home. Other structural damage was limited to shingles and gutters.

### Chester County

#### Chester

08	0200EST				0	0			Flash Flood
	0400EST								

### York County

#### Rock Hill to Ft Mill

08	0200EST				0	0			Flash Flood
	0400EST								

An intense tropical rain band moved north across portions of the eastern piedmont during the early morning hours, causing small creeks and streams to rise quickly to flood.

### SCZ009-014

#### York - Chester

08	0400EST				0	0			Flood
	0700EST								

After the intense rainfall rates ended, continued moderate to occasionally heavy rainfall allowed general flooding to persist into the mid-morning.

### SCZ005>006

#### Greater Pickens - Greater Greenville

09	0900EST				0	0	100K		Flood
10	0800EST								

After flooding due to the heavy rainfall on the 7th abated, the Saluda River crested a second time on the morning of the 9th, as the heavy rainfall that fell well upstream worked its way through the system.

### Laurens County

#### 13 SE Laurens

16	1612EST	0.5	20		0	0			Tornado (F0)
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This brief, weak tornado blew down a few trees.

### SCZ001>002-004>005-010

#### Oconee Mountains - Pickens Mountains - Greater Oconee - Greater Pickens - Anderson

16	1700EST				0	0	100K		High Wind (G55)
17	0300EST								

High winds developed across the mountains and a portion of the foothills during the evening as the remnants of Hurricane Ivan moved just west of the area. Numerous trees were blown down, many of which fell on vehicles and structures. The hardest hit areas were generally in areas from the mountains south to highway 11.

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>SOUTH CAROLINA, Northwest</u></b>									
<b>Anderson County</b>									
4 SSE Townville	16	1725EST	0.1	15	0	0			Tornado (F0)
This brief tornado produced mainly tree damage in the Double Springs community.									
<b>Oconee County</b>									
13 SE Walhalla to 8 SE Walhalla	16	1735EST 1743EST	5	50	0	0	2K		Tornado (F0)
This weak tornado blew down numerous trees and power lines along its 5-mile track.									
<b>Anderson County</b>									
3 W Iva	16	1740EST	0.1	10	0	0			Tornado (F0)
This tornado touched down very briefly in an open field.									
<b>Oconee County</b>									
Westminster to 4 NNW Westminster	16	1755EST 1802EST	4.5	50	0	0	75K		Tornado (F1)
This tornado blew down numerous trees and power lines along its track, some of which fell on homes. A mobile home was destroyed when it was blown into an embankment.									
<b>SCZ001&gt;002-004&gt;005</b>									
<b>Oconee Mountains - Pickens Mountains - Greater Oconee - Greater Pickens</b>									
	16	2000EST			0	0	116K		Flood
	17	0800EST							
Moderate to heavy rainfall associated with the remnants of Hurricane Ivan resulted in flooding along a few creeks during mid-evening across the northwest part of the Upstate. The flooding gradually became widespread and more severe during the overnight hours, especially in Oconee County, as the Tugaloo River flooded, trapping a number of famalies, some of which required rescue via helicopter. A number of bridges and roads were washed out or otherwise damaged by flood water.									
<b>SCZ003-006&gt;007</b>									
<b>Greenville Mountains - Greater Greenville - Spartanburg</b>									
	16	2300EST			0	0	15K		High Wind (G50)
	17	0500EST							
The remnants of Hurricane Ivan continued to cause strong enough winds to blow down a number of trees and power lines across portions of the mountains and foothills. A few fell on structures and vehicles, and there were scattered power outages. The damage was more widespread across the western Upstate.									
<b>Spartanburg County</b>									
Campobello	16	2330EST			0	0	1M		Lightning
Lightning struck an industrial plant, igniting a fire which destroyed about 2/3 of the facility.									
<b>SCZ007</b>									
<b>Spartanburg</b>									
	17	0100EST 0800EST			0	0			Flood
After an evening of heavy rainfall, several small streams flooded just after midnight. Several bridges were covered with water. Most areas affected were in the northwest quarter of the county, including Campobello, Inman, and Lyman. The Pacolet River also flooded in spots.									
<b>Chester County</b>									
6 WSW Great Falls	17	0510EST			0	0	25K		Thunderstorm Wind (G65)
Two tractor trailers flipped over on I-77 when the drivers lost control due to strong winds.									
<b>Abbeville County</b>									
Abbeville to Calhoun Falls	27	1750EST 1930EST			0	0	26K		Flash Flood
<b>Greenwood County</b>									
Greenwood	27	1815EST 2000EST			0	0			Flash Flood
Intense rainfall rates associated with the remnants of Hurricane Jeanne resulted in rapid rises and flash flooding along some small creeks and streams across the southern part of the Upstate. Some of the worst flooding occurred around Abbeville, where several bridges were covered by flooding streams. Severe urban flooding developed in the city of Greenwood, as the bypass at Burton Plaza was covered with water, and a small stream flooded a portion of Laurel St. Several other roads were closed around the city, including Scotts and Airport Roads. In addition, a portion of highway 72 became covered with water near Calhoun Falls. Several roads and bridges were damaged by flood water.									
<b>Anderson County</b>									
5 S Anderson to Honea Path	27	1830EST 2030EST			0	0	50K		Flash Flood

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## SOUTH CAROLINA, Northwest

### Oconee County

#### South Portion

27 1830EST  
2030EST 0 0 20K Flash Flood

As an intense tropical rain band moved across the western Upstate, some flash flooding developed. Part of highway 81S was closed in Anderson County when a construction site was flooded in the northbound lane. Widespread flash flooding also occurred around Iva, where all low spots filled quickly with deep water. At Honea Path, an apartment building was evacuated after flooding from a stopped up storm drain entered the building. Some businesses incurred minor flood damage in southern Oconee County. Urban flooding also occurred in Anderson.

### Laurens County

#### Countywide

27 1915EST  
2300EST 0 0 5K Flash Flood

As the intense tropical rain band continued to sweep over the Upstate, flash flooding developed across Laurens County, where up to a foot-and-a-half of water accumulated in low places on Interstate 385 from Laurens to the Greenville line. Interstate 26 was also flooded between mile markers 52 and 55. Flooding was also reported along highway 221S around Waterloo with a foot of water covering the road in low places. By late evening, flash flooding became severe, as 5 to 6 inches of rain had fallen in just a 3-hour period. Water covered a number of bridges from the Hickory Tavern and Green Pond areas, east across Gray Court and Fountain Inn to the Spartanburg line. At Cooks Bridge, just the reflectors along the top of the bridge were visible. Evacuations of several homes were required around Fountain Inn. Flooding also developed in the Ware Shoals area.

### Greenville County

#### Fountain Inn to Simpsonville

27 2000EST  
2300EST 0 0 20K Flash Flood

Flooding developed quickly across Greenville County during mid-evening. Numerous automobiles were stranded in water in the southern and eastern parts of the county. Flash flooding occurred around Fork Shoals, along highway 25 south of Greenville, and along Jones Mill Rd east of Fountain Inn. Gilder Creek flooded from Mauldin downstream to the Enoree River. Water from the flooded creek covered a bridge at E Georgia Rd.

### Spartanburg County

#### Central Portion

27 2100EST  
2300EST 0 0 20K Flash Flood

### Greenville County

#### Berea to Greer

27 2130EST  
2300EST 0 0 Flash Flood

As the intense tropical rain band associated with the remnants of Jeanne continued to progress north and east across the Upstate, flash flooding followed. Numerous streams rose quickly to flood, including Brushy Creek and the Enoree River around Greer and Taylors. Numerous people required rescue from their automobiles in this area. The Reedy River also flooded from Berea to downtown Greenville. In Spartanburg County, a bridge was washed out on Apple Valley Rd in the Berry Shoals area. Portions of South Blackstock Rd and Reidville Rd were flooded, as was highway 101 north of Woodruff.

### Cherokee County

#### 2 S Gaffney

27 2115EST  
2116EST 0.8 50 0 0 88K Tornado (F1)

This tornado destroyed a mobile home and blew down numerous trees and power lines.

### Chester County

#### 7 NE Chester

27 2200EST 0 0 Thunderstorm Wind (G50)

A few trees were blown down along highway 72. There were also some power outages in the area.

### SCZ006>007-012

#### Greater Greenville - Spartanburg - Laurens

27 2300EST 0 0 Flood  
28 1100EST

After an evening of flash flooding, rises along creeks and streams moderated, but general flooding persisted through the overnight and morning hours, as rainfall worked its way downstream through the water systems. The main flood problem was along the Enoree River basin in eastern Greenville and Spartanburg Counties, as Gilder and Peters Creeks and other tributaries remained in flood for many hours. There was also considerable urban and small stream flooding throughout the city of Spartanburg.

## SOUTH CAROLINA, South Coastal

### Jasper County

#### 13 SSW Hardeeville

06 1017EST  
1020EST 1 100 0 0 Tornado (F0)

A tornado crossed into Jasper County from Chatham County Georgia. The tornado tracked through a marshy area and no significant damage occurred.

### Charleston County

#### 1 NW Adams Run

06 1155EST  
1200EST 0 0 Thunderstorm Wind (G50)

Thunderstorms winds knocked down several trees.

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed    Injured		Estimated Damage Property    Crops	Character of Storm	
<b><u>SOUTH CAROLINA, South Coastal</u></b>									
<b>Colleton County</b>									
4 NW Jacksonboro to 4.5 NW Jacksonboro	06	1205EST 1210EST	0.5	40	0	0		Tornado (F0)	
A tornado knocked down trees.									
<b>Jasper County</b>									
4 SE Hardeeville to 2 SE Hardeeville	06	1355EST 1405EST	2	100	0	1		Tornado (F1)	
A tornado knocked down limbs and trees, one of which fell on a mobile home causing 1 injury.									
<b>Colleton County</b>									
6 SE Walterboro	06	1810EST 1815EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down several trees.									
<b>Charleston County</b>									
3 WNW Hollywood	06	1820EST 1825EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down several trees.									
<b>Colleton County</b>									
3 W Canadys	06	1940EST 1945EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down trees and large limbs.									
<b>Berkeley County</b>									
15 SW Cross	07	0015EST 0020EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down trees.									
<b>Dorchester County</b>									
2 NE Ridgeville	07	0145EST 0150EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down several trees.									
<b>Jasper County</b>									
5 NE Hardeeville to 5.5 NE Hardeeville	07	0230EST 0235EST	0.5	50	0	0		Tornado (F0)	
A tornado knocked down trees.									
<b>Dorchester County</b>									
8 SE Harleyville to 7.5 SE Harleyville	07	0255EST 0300EST	0.5	40	0	0		Tornado (F0)	
A small tornado knocked down trees and large limbs.									
<b>Allendale County</b>									
2 NW Allendale to 4 NW Allendale	07	0420EST 0428EST	2	40	0	0		Tornado (F0)	
A tornado knocked down and snapped off numerous trees.									
<b>Allendale County</b>									
4 NW Seigling to 5 NW Seigling	07	0440EST 0445EST	1	40	0	0		Tornado (F0)	
A tornado snapped and downed several trees.									
<b>Jasper County</b>									
2 E Gillisonville to 2 NNW Gillisonville	07	0635EST 0645EST	4	75	0	0		Tornado (F1)	
A tornado knocked down trees. Many trees were snapped off and thrown in different directions.									
<b>Berkeley County</b>									
6 W Goose Creek	07	0940EST 0945EST			0	0		Thunderstorm Wind (G50)	
Thunderstorms winds knocked down trees.									
<b>Charleston County</b>									
North Charleston	07	1015EST 1018EST			0	0		Thunderstorm Wind (G50)	
Two trees were blown along the 52 Connector.									
<b>Berkeley County</b>									
Goose Creek	07	1028EST 1032EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down trees.									
<b>Allendale County</b>									
5 NW Seigling	07	1100EST 1105EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down trees and large limbs.									

# Storm Data and Unusual Weather Phenomena

September 2004

									September 2004
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed   Injured		Estimated Damage Property   Crops	Character of Storm	
<b><u>SOUTH CAROLINA, South Coastal</u></b>									
<b>Hampton County</b>									
5 NE Brunson to 5 N Brunson	07	1430EST 1435EST	0.5	40	0	0		Tornado (F0)	
A tornado knocked down trees in the county before crossing into Allendale county.									
<b>Allendale County</b>									
4 E Fairfax to 4 ESE Sycamore	07	1435EST 1445EST	4	100	0	0		Tornado (F1)	
A weak F1 tornado crossed from Hampton county into Allendale county. The tornado uprooted and snapped off trees along its path.									
<b>Allendale County</b>									
10 S Martin to 9.5 S Martin	07	2005EST 2010EST	0.5	40	0	0		Tornado (F0)	
A tornado snapped and bent trees in various directions.									
<b>Allendale County</b>									
4 NE Millett to 4 N Millett	07	2020EST 2030EST	1	50	0	0		Tornado (F0)	
A tornado snapped trees and bent others in various directions.									
Hurricane Frances made land fall over the Florida Panhandle and continued to track in a generally northward direction into Georgia, before turning more to the northeast. This track placed the Charleston County Warning Area in the favorable right side of the remnants of Frances which produced numerous tornadoes and areas of straight line wind damage over southeast Georgia and south coastal South Carolina. Several Georgia counties also experienced flash flooding as there were isolated rainfall amounts of 5 to 8 inches over a 24 to 36 hour period. This was on top of already saturated ground from heavy rains during the month of August. The South Carolina counties experienced more nuisance type flooding as the rainfall amounts were not as high as what occurred in southeast Georgia.									
<b>Beaufort County</b>									
Hilton Head Is	06	1340EST 1345EST	1	75	0	0		Tornado (F1)	
A picket fenced was knocked down. Part of the fence went through the door of a house. The roof of a house was partially lifted and then set back down. This caused some interior damage to the home.									
<b>Allendale County</b>									
13 S Martin	27	0420EST 0425EST			0	0		Thunderstorm Wind (G50)	
Several trees and large limbs were knocked down by thunderstorm winds.									
<b>Hampton County</b>									
4 NE Early Branch to 4 NNE Early Branch	27	0445EST 0450EST	0.5	40	0	0		Tornado (F0)	
A weak tornado knocked down several trees.									
<b>Berkeley County</b>									
1 W Pineville to 1 NW Pineville	27	0730EST 0735EST	1	150	0	0		Tornado (F0)	
A weak tornado damaged 2 mobile homes and a shed. One mobile home had the entire roof torn off and the second had skirting torn off. Numerous trees and limbs were knocked down.									
<b>Charleston County</b>									
Charleston to Isle Of Palms	27	0800EST 0930EST			0	0		Flash Flood	
Heavy rainfall caused flooded roads in Charleston, Mt. Pleasant, and the Isle of Palms.									
<b>Colleton County</b>									
Countywide	27	2030EST 2100EST			0	0		Thunderstorm Wind (G60)	
Thunderstorm winds knocked down numerous trees across the county. One tree fell on a house and another fell on a vehicle.									
<b>Dorchester County</b>									
St George	27	2110EST 2125EST			0	0		Thunderstorm Wind (G50)	
Thunderstorm winds knocked down trees in several locations across the northern part of the county.									
<b>SCZ043-047&gt;050 Northern Colleton - Jasper - Beaufort - Southern Colleton - Charleston</b>									
	28	0500EST 1400EST			0	0		Tropical Storm	

The center of Tropical Storm Jeanne tracked across inland Georgia but the strongest winds at the time were along the coast. Maximum wind gusts were 41 mph at both the Charleston downtown observation and the Charleston airport. The C-Man station at Folly Beach had a maximum wind gust of 38 mph. Non-tornadic wind damage was limited to a few trees falling on cars.

## **SOUTH DAKOTA, Central and North**

<b>Stanley County</b>									
10 W Mission Ridge	10	2130CST			0	0			Hail (2.00)

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## SOUTH DAKOTA, Central and North

### **Roberts County**

11 S Rosholt to 9 SSW Rosholt	23	1404CST 1409CST	2.2	50	0	0			Tornado (F2)
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The storm entered South Dakota from Traverse county, Minnesota where it produced a tornado. The storm produced a second tornado as it crossed Lake Traverse into South Dakota. This tornado was stronger and destroyed a house, a mobile home, and a travel trailer. Another house and travel trailer were damaged and a shed was also ripped apart. The tornado also killed three cattle.

## SOUTH DAKOTA, Southeast

### **Davison County**

7 SE Mt Vernon	04	1830CST			0	0			Hail (1.00)
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### **Davison County**

5 N Mitchell	04	1840CST			0	0			Hail (0.75)
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### **Sanborn County**

3 SE Artesian	04	1858CST			0	0			Hail (1.00)
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### **Miner County**

1 W Fedora	04	1908CST			0	0			Hail (0.75)
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### **Davison County**

Mitchell	04	2000CST			0	0	2K		Lightning
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Lightning struck and damaged a brick chimney, and burned out a transformer at an amusement center.

### **Hanson County**

9 SW Alexandria	05	1750CST			0	0			Hail (0.75)
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### **Clay County**

5 E Wakonda	13	1715CST			0	0			Hail (1.50)
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### **Turner County**

2 N Centerville	13	1726CST			0	0			Hail (1.00)
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### **Lincoln County**

5 NW Beresford	13	1730CST			0	0			Hail (1.50)
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### **Minnehaha County**

Sioux Falls	13	1821CST			0	0			Hail (1.00)
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### **Minnehaha County**

Sioux Falls	13	1823CST			0	0			Hail (0.75)
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### **Minnehaha County**

Sioux Falls	13	1825CST			0	0			Hail (0.88)
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### **Minnehaha County**

3 N Brandon	13	1830CST			0	0			Hail (0.88)
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### **Aurora County**

10 NE Plankinton	16	2010CST 2015CST			0	0			Hail (0.75)
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### **Davison County**

7 NW Mt Vernon	16	2010CST 2015CST			0	0			Hail (0.88)
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### **Sanborn County**

1 S Letcher	16	2035CST			0	0			Hail (0.75)
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### **Davison County**

3 N Loomis	16	2050CST			0	0			Hail (0.88)
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## SOUTH DAKOTA, West

### **Pennington County**

Keystone	10	1835MST			0	0	0	0	Hail (1.25)
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# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## SOUTH DAKOTA, West

### **Pennington County**

4 SW Rapid City 10 1911MST 0 0 0 0 Hail (0.75)

### **Pennington County**

7 SW Rapid City 10 1912MST 0 0 0 0 Hail (0.75)

### **Custer County**

1 W Hermosa 10 1915MST 0 0 0 0 Hail (1.00)

### **Ziebach County**

21 NE Cherry Creek 10 2015MST 0 0 0 0 Hail (0.75)

### **Fall River County**

2 N Provo 14 1600MST 0.1 10 0 0 0 0 Tornado (F0)

Small tornado was on the ground for about 1 minute. No damage.

### **Custer County**

22 W Custer 19 1530MST 0 0 0 0 Thunderstorm Wind (G65)

### **Custer County**

8 ESE Custer 19 1625MST 0 0 0 0 Thunderstorm Wind (G52)

### **Fall River County**

12 W Hot Spgs 19 1550MST 0 0 0 0 Thunderstorm Wind (G62)

A 71 mph thunderstorm wind gust was recorded at Red Canyon RAWS.

## TENNESSEE, Central

### **Davidson County**

9.6 NE Nashville 02 1830CST 0 0 1K Flash Flood

NWS employee reported street flooding near the intersection of Old Hickory Boulevard and Merritt Street in the Old Hickory area of Davidson County.

### **Humphreys County**

Mc Ewen 12 1250CST 0 0 Hail (1.00)

Law enforcement reported hail the size of quarters during this 20 minute period.

### **Benton County**

Big Sandy 12 1410CST 0 0 Hail (1.75)

Sheriff's office reported golf ball size hail.

### **Perry County**

Linden 12 1650CST 0 0 1K Flash Flood

U.S. Highway 412 E and Highway 100 intersection was flooded near the high school.

### **Perry County**

Linden 12 1745CST 0 0 Thunderstorm Wind (G50)

Trees were blown down.

### **Wayne County**

17 S Waynesboro 12 1845CST 0 0 Thunderstorm Wind (G50)

Trees were blown down on Spain Rd.

### **Wayne County**

10 SE Waynesboro 12 1900CST 0 0 1K Flash Flood

Shawnette Creek Road was flooded and impassable.

TNZ011-033>034-057>062-066-075-077-079>080-093>095

16 1617CST 0 0 170K 1.7M High Wind (G40)

17 0300CST

Strong winds from the remains of Hurricane Ivan blew down many trees and power lines across Middle Tennessee from Thursday evening into early Friday morning. There were 30 incidents on Thursday night where trees had fallen across roadways or downed power lines in Lawrence County alone. Many homes in Lawrence County sustained damage from fallen trees and tree limbs. U.S.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## TENNESSEE, Central

Highway 64 west and east was blocked for a time in Lawrence County by fallen trees. Lawrence County students enjoyed a day off on Friday due to clean up efforts. In the city of Loretto, a tree fell on a building on Broad Street and caused some structural damage. A pine tree fell on a shed in Tullahoma. A large oak tree in just off Ragsdale Road in Manchester fell on 2 small barns and a lawn tractor.

A 100-foot tree fell at the Salters residence on Fuller Hollow Road in Marshall County. Also, a large tree fell on a pick up truck on Derry Street in Shelbyville.

The 3 inches of rain on the night of September 16th along with the gusty winds destroyed the Amazing Corn Maize at Rippavilla located in Spring Hill. Damage was estimated to be \$17,000. Rippavilla was scheduled to open on Thursday. The corn maize formed a portrait of explorer Meriwether Lewis at the historic Rippavilla Plantation.

About 7000 people lost power in Middle Tennessee due to the remains of Hurricane Ivan.

In Giles County alone, there was \$1.7 million done to the white corn crop. The winds blew down the corn stalks. A business in Ardmore, also in Giles County, lost a roof, and sustained about \$50,000 in damages. Also, there was roof damage done to the Giles County High School. The School Board approved funds for a new roof costing \$74,619. These damage assessments were from the Emergency Management Director and newspaper clippings.

Total damage due to this storm in Middle Tennessee was about \$170,000 in property damage and \$1.7 million in crop damage.

## **TNZ032>033-064-066-080 Putnam - Overton - Dekalb - Cumberland - Van Buren**

17 0200CST 0 0 5K Flood  
0900CST

Street flooding was reported in Monterey.

## TENNESSEE, East **TNZ098**

**Marion**  
16 1500CST 0 0 15K Tropical Depression

Numerous trees and power lines were reported down across the county from 500 pm through 1100 pm cdt.

**TNZ099 Hamilton**  
16 1700EST 0 0 15K Tropical Depression  
17 0100EST

Numerous trees and power lines were reported down across the county from 600 pm on 09/16/04 through 200 am on 09/17/04.

**TNZ081 Sequatchie**  
16 1708CST 0 0 15K Tropical Depression

Numerous trees and power lines were reported down across the county.

**TNZ082 Bledsoe**  
16 1708CST 0 0 12K Tropical Depression

Several trees were reported down across the county.

**TNZ099 Hamilton**  
16 1822EST 0 0 15K Tropical Depression

Numerous trees were reported down mainly across the higher elevations in the county.

**TNZ083 Rhea**  
16 1824EST 0 0 12K Tropical Depression

Several trees were reported down mainly across the higher elevations in the county.

**TNZ036 Anderson**  
16 1830EST 0 0 15K Tropical Depression  
17 0400EST

Numerous trees and power lines were reported down across the county from 730 pm on 9/16/04 through 500 am on 9/17/04.

**TNZ100 Bradley**  
16 1855EST 0 0 15K Tropical Depression

Several trees and power lines were reported down across the county.



## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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		Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed   Injured		Estimated Damage Property   Crops		September 2004
Location	Date								Character of Storm
<b><u>TENNESSEE, South Central</u></b>									
<b>TN</b>	<b>Z076-096</b>	<b>&gt;097</b>							
		<b>Moore - Lincoln - Franklin</b>							
	<b>16</b>	<b>1300CST</b>			<b>0</b>	<b>0</b>	<b>350K</b>		<b>High Wind (G50)</b>
		<b>2200CST</b>							
<b>Franklin County</b>									
	<b>Countywide</b>	<b>16</b>	<b>1905CST</b>		<b>0</b>	<b>0</b>			<b>Flash Flood</b>
		<b>17</b>	<b>0300CST</b>						
Widespread flash flooding was reported throughout the county. Several roads had at least 10 inches of water over the road.									
<b>Lincoln County</b>									
	<b>Countywide</b>	<b>16</b>	<b>1905CST</b>		<b>0</b>	<b>0</b>			<b>Flash Flood</b>
		<b>17</b>	<b>0300CST</b>						
Widespread flash flooding was reported throughout the county with several roads with at least six to ten inches of water over them.									
<b>Moore County</b>									
	<b>Countywide</b>	<b>16</b>	<b>1905CST</b>		<b>0</b>	<b>0</b>			<b>Flash Flood</b>
		<b>17</b>	<b>0300CST</b>						
Widespread flash flooding was reported with many roads throughout the county with several inches of water over the roads.									
<b><u>TENNESSEE, West</u></b>									
<b>Gibson County</b>									
	<b>Milan</b>	<b>12</b>	<b>1450CST</b>		<b>0</b>	<b>0</b>	<b>0.85K</b>		<b>Hail (1.75)</b>
			<b>1500CST</b>						
<b>Crockett County</b>									
	<b>2 N Alamo</b>	<b>12</b>	<b>1455CST</b>		<b>0</b>	<b>0</b>	<b>0.01K</b>		<b>Hail (0.75)</b>
			<b>1500CST</b>						
<b>Shelby County</b>									
	<b>Arlington</b>	<b>12</b>	<b>1500CST</b>		<b>1</b>	<b>0</b>	<b>0</b>		<b>Lightning</b>
			<b>1505CST</b>						
A man was killed by a lightning strike while hunting in a field. M53OU									
<b>Lauderdale County</b>									
	<b>Ripley</b>	<b>12</b>	<b>1505CST</b>		<b>0</b>	<b>0</b>	<b>0.75K</b>		<b>Hail (1.75)</b>
			<b>1510CST</b>						
<b>Shelby County</b>									
	<b>Arlington</b>	<b>12</b>	<b>1550CST</b>		<b>0</b>	<b>0</b>	<b>0.01K</b>		<b>Hail (0.75)</b>
			<b>1555CST</b>						
<b>Decatur County</b>									
	<b>Decaturville</b>	<b>12</b>	<b>1622CST</b>		<b>0</b>	<b>0</b>	<b>0.25K</b>		<b>Hail (1.25)</b>
			<b>1630CST</b>						
<b>Tipton County</b>									
	<b>Brighton</b>	<b>12</b>	<b>1630CST</b>		<b>0</b>	<b>0</b>	<b>0.01K</b>		<b>Hail (0.75)</b>
			<b>1635CST</b>						
<b>Tipton County</b>									
	<b>Brighton</b>	<b>12</b>	<b>1647CST</b>		<b>0</b>	<b>0</b>	<b>0.01K</b>		<b>Hail (0.75)</b>
			<b>1655CST</b>						
<b><u>TEXAS, Central</u></b>									
<b>Tom Green County</b>									
	<b>San Angelo Mathis Fl</b>	<b>23</b>	<b>1908CST</b>		<b>0</b>	<b>0</b>			<b>Thunderstorm Wind (G56)</b>
<b>Tom Green County</b>									
	<b>4 SW San Angelo</b>	<b>23</b>	<b>1940CST</b>		<b>0</b>	<b>0</b>			<b>Flash Flood</b>
			<b>2040CST</b>						
Heavy rains across the south and west portions of San Angelo produced flash flooding. As many as seven vehicles stalled in high water near the intersection of Sunset and College Hills near the Red Arroyo. Four other vehicles were stalled out near loop 306 and Southwest Blvd.									
<b>Tom Green County</b>									
	<b>5 E Wall</b>	<b>23</b>	<b>1940CST</b>		<b>0</b>	<b>0</b>			<b>Hail (2.75)</b>
Although hail up to golf ball size occured, the hail was so soft that it did not produce damage.									

## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
<b><u>TEXAS, Central Southeast</u></b>									
<b>Waller County</b> 5 S Waller	04	1540CST			0	0			Funnel Cloud
<b>Wharton County</b> 2 SE El Campo	14	1135CST			0	0			Funnel Cloud
<b>Wharton County</b> 6 NW El Campo	14	1432CST			0	0			Funnel Cloud
		Spotted at FM 2546 and Hwy 71.							
<b>Washington County</b> Burton	14	1437CST			0	0			Funnel Cloud
<b>Houston County</b> Grapeland	14	1635CST			1	40			Lightning
		Lightning strike at Grapeland High School during football practice. Twenty-two kept overnight at hospital for observation, all released the next day. One fatality the following day. M18OU							
<b><u>TEXAS, Extreme West</u></b>									
<b>Hudspeth County</b> 7 NW Ft Hancock	24 25	2345MST 0015MST			0	0			Flash Flood
<b>El Paso County</b> Socorro	25	0000MST 0200MST			0	0			Flash Flood
<b>El Paso County</b> 7 NNW El Paso Intl Arpt	29	1718MST			0	0			Hail (1.50)
<b>El Paso County</b> Northwest Portion	29	1720MST 1830MST			0	0	5K		Flash Flood
<b>El Paso County</b> 8 NNW El Paso Intl Arpt	29	1732MST			0	0			Thunderstorm Wind (G58)
<b>El Paso County</b> 10 N El Paso Intl Arpt	29	1740MST			0	0			Hail (1.00)
<b><u>TEXAS, Mid - South</u></b>									
<b>Nueces County</b> Corpus Christi	02	1530CST 1730CST			0	0			Flash Flood
		Heavy rainfall across the south side of Corpus Christi led to flash flooding of several city streets. Off duty NWS employee measured 4.2 inches of rainfall on the south side of Corpus Christi in 1 hour and 45 minutes.							
<b><u>TEXAS, North</u></b>									
<b>Denton County</b> Sanger	14	1530CST			0	1	25K		Thunderstorm Wind (G61)
		A house under construction collapsed from high winds, trapping a worker inside. It took an hour to free him from the debris before he could be taken to a hospital. Some trees and power lines were also blown down.							
<b>Cooke County</b> Gainesville	14	1630CST			0	0	25K		Thunderstorm Wind (G61)
		A mobile home was unroofed in the FRF Estates. A telephone pole was blown down and the canopy over a rodeo arena was blown off. A fence around the arena was uprooted and blown away. Some trees were also blown down.							
<b>Cooke County</b> Valley View	14	1630CST			0	0	30K		Lightning
		Lightning caused two house fires with minor damage to one and moderate damage to the other.							

## Storm Data and Unusual Weather Phenomena

Time Loss/ Length	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>TEXAS, North</u></b>									
<b>Henderson County</b>									
Athens	14	1800CST			0	0			Thunderstorm Wind (G52)
A large tree at the courthouse was blown down.									
<b><u>TEXAS, North Panhandle</u></b>									
<b>Deaf Smith County</b>									
9 WSW Hereford	22	1745CST			0	0			Hail (1.00)
<b>Hutchinson County</b>									
Borger to Bunavista	22	1756CST 2300CST			0	0	240K		Flash Flood
Three to five homes in the towns of Borger and Bunavista had to be evacuated due to rapidly rising water with another four to six homes threatened by the flash flooding. The flash flooding also closed down several streets including Texas Highway 136.									
<b>Deaf Smith County</b>									
Hereford	22	1758CST			0	0			Hail (1.00)
<b>Potter County</b>									
Amarillo Intl Arpt	22	1821CST			0	0			Hail (0.88)
Reported by the Science and Operations Officer at the Amarillo National Weather Service Office.									
<b>Potter County</b>									
10 E Amarillo	22	1825CST			0	0			Hail (1.00)
<b>Potter County</b>									
9 E Amarillo	22	1826CST			0	0			Hail (0.88)
Severe thunderstorms during the early evening hours produced large hail across the southwest and south-central Texas panhandle. No damage or injuries were reported by the hail. In the central Texas panhandle...thunderstorms with very heavy rainfall resulted in flash flooding in the towns of Borger and Bunavista where several homes were either evacuated or threatened by the rapidly rising waters. Several streets and highways were closed due to the high water. No injuries were reported from the flash flooding.									
<b>Deaf Smith County</b>									
Hereford	27	0957CST 1800CST			0	0	180K	90K	Flash Flood
Thunderstorms with very heavy rainfall remained over the southwest Texas panhandle from the late morning and into the early evening hours. This led to serious flooding in the town of Hereford where parts of Hereford were reported to be under water. The hardest hit area was the San Jose community which had damage to homes. Also...the cotton and corn crops were reported damaged by the flash flooding and some young wheat crops drowned.									
<b><u>TEXAS, Northeast</u></b>									
<b>Angelina County</b>									
Lufkin	24	1014CST 1315CST			0	0			Flash Flood
Excessive heavy rainfall in town caused severe street flooding. Some streets were closed with cars becoming stalled in high water.									
<b><u>TEXAS, South</u></b>									
NOT RECEIVED.									
<b><u>TEXAS, South Central</u></b>									
<b>Frio County</b>									
Countywide	01	1000CST 1200CST			0	0			Flash Flood
General 2 to 3 inch rainfall from near Frio Town along FM140 into Pearsall and then southeastward along FM 1582 to the southeast corner of Frio County caused widespread flash flooding. The worst problems were in the city of Pearsall near the noon hour.									
<b>Travis County</b>									
Austin	14	1600CST 1700CST			0	0			Flash Flood
Thunderstorms moving over Austin produced a general 1 inch rainfall with parts of the city receiving almost 3 inches. Numerous low water crossings were reported closed across the city through the late afternoon, backing up traffic for almost two hours during the rush hour. One man attempting to cross swollen Waller Creek on foot lost his balance and was swept downstream. Fortunately he was rescued safely.									

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<b>TEXAS, South Central</b>									
<b>Bexar County</b>									
San Antonio	22	2100CST 2130CST			1	0			Flash Flood
A young girl drowned in a brief flash flood event as she and her grandmother were driving across a culvert that was under construction. Although less than 2 inches of rain had fallen, water swept quickly through the low area, trapping the vehicle. The grandmother left the car and was pulled to safety by residents of the area. The young girl was swept off her feet and washed into a drainage pipe where she drowned.									
F10VE									
<b>Val Verde County</b>									
Northeast Portion	23	0330CST 0630CST			0	0			Flash Flood
Thunderstorms moving very slowly across the northeast portion of Val Verde County dropped between 2 and 3 inches northeast of a line from Juno to Loma Alta. The heaviest rainfall reported was near 6 inches just north of Juno at the intersections of SH163 and FM189. Numerous low water crossings were reported under water through the early morning hours.									
<b>Medina County</b>									
West Portion	23	1930CST 2200CST			0	0			Flash Flood
Thunderstorms produced rainfall over most of Medina County in the late afternoon, with the western part of the county receiving between 1 and 2 inches. The heaviest amount, between 3 and 4 inches, fell in a triangular area from where FM1796 crosses the Uvalde County line to where US90 touches the Uvalde County line to Hondo. Flash flooding closed sections of FM1796 and FM2200 briefly during the evening.									
<b>De Witt County</b>									
Central Portion	25	2000CST 2200CST			0	0			Flash Flood
Rainfall totals in showers and thunderstorms averaged 1 inch with isolated reports of up to 3 inches in the area from Yorktown to Cuero to Westhoff. Several roads were reported under water and closed by the Sheriff's Department through the evening.									
<b>Val Verde County</b>									
Countywide	26 27	1330CST 0100CST			0	0			Flash Flood
Soils over Val Verde County, especially the northern half of the county, had been essentially saturated by the rainfall on September 23. Storms formed between Pandale, Comstock and Juno, in the late morning of the 26th and flash flooding began to cover low water crossings by the early afternoon. As the storms spread eastward and southward through the afternoon and evening, flash flooding continued. By late evening, numerous roads were under water and closed between Loma Alta and Del Rio. In all, rain totals along and east of a line from Pandale to Comstock to Del Rio averaged between 1 and 2 inches, with widespread 3 inch amounts. The highest accumulations were between 5 and 6 inches near Pandale.									
<b>Edwards County</b>									
West Portion	26 27	1900CST 0100CST			0	0			Flash Flood
Thunderstorms continued to spread eastward from Val Verde County on the 26th, moving into Edwards County in the mid afternoon. They dropped between 1 and 2 inches of rain over the western half of the county between 4 pm and 8 pm, with accumulations of up to 4 inches near where US277 crosses the Val Verde County line and just south of Carta Valley. Sections of US377, US277 and FM2523 were reported closed due to high water.									
<b>Edwards County</b>									
Southwest Portion	27	1500CST 1630CST			0	0			Flash Flood
Thunderstorms reformed during the early afternoon of the 27th, re-developing flash flooding over the western half of the county very quickly. They continue to spread slowly southeastward, producing between 1 and 2 inches of rain south and east of Carta Valley to the Kinney County line. Once again, portions of US377 and FM2523 were reported to be briefly under water in the late afternoon.									
<b>Kinney County</b>									
Countywide	27	1700CST 1900CST			0	0			Flash Flood
The thunderstorms spread into Kinney County during the late afternoon, with rainfall totals over the county averaging between 1 and 2 inches. Highest amounts were near 4 inches along FM674 from where it crosses the Edwards County border to just north of Brackettville. FM674 and FM334 were reported under water in the early evening.									
<b>Uvalde County</b>									
West Portion	27	1830CST 2030CST			0	0			Flash Flood
The thunderstorms continued to spread eastward from Kinney County into western Uvalde County, with rain totals between 1 and 2 inches over the area. Highest totals were near 4 inches just northwest of Concan. Brief flash flooding closed portions of SH55 in the northwest part of the county and several roads north of Concan.									
<b>Val Verde County</b>									
Comstock	27	1900CST 2030CST			0	0			Flash Flood
Very slow-moving thunderstorms formed in the Comstock area in the late afternoon and produced between 2 and 3 inches of rain around the town. The Sheriff's Department reported portions of FM1024 and SH163 briefly closed in the Comstock area.									

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## TEXAS, South Panhandle

### Parmer County

5 NE Black	22	1740CST			0	0		25K	Hail (1.00)
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### Castro County

Summerfield	22	1745CST			0	0		25K	Hail (1.00)
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### Bailey County

6 W Baileyboro	22	1908CST			0	0		50K	Hail (1.75)
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Golfball sized hail was reported by the Bailey County Sheriff's Office.

### Bailey County

15 S Muleshoe	22	1930CST			0	0		25K	Hail (1.75)
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Golfball sized hail was reported at the Muleshoe Wildlife Refuge.

### Bailey County

7 W Bula	22	2000CST			0	0		25K	Hail (1.00)
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### Floyd County

3 N Aiken	24	1640CST			0	0		25K	Hail (1.00)
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### Floyd County

Lockney	24	1644CST 1657CST			0	0	10K	25K	Hail (1.75)
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Penny to Golfball sized hail reported by Sheriff's office in Lockney.

### Castro County

7 SW Dimmitt	26	1315CST 1500CST			0	0			Flash Flood
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Flood waters of 3-4 feet deep closed Farm-to-Market Road 1055 between Highway 86 and Farm-to-Market Road 1524.

### Castro County

Dimmitt	26	1330CST 1500CST			0	0	4K		Flash Flood
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Flood waters entered a home in Dimmitt causing carpet and floor damage.

### Cochran County

Morton	26	1521CST 1600CST			0	0			Flash Flood
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Flooding resulted in closure of Main St in Morton.

### Yoakum County

Denver City	26	1830CST 2345CST			0	0			Flash Flood
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Widespread flooding around Denver City resulted in numerous road closures.

### Bailey County

3 NW Muleshoe	26	2130CST 2230CST			0	0			Flash Flood
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Flooding was reported at Highway 84 and Farm-to-Market Road 1760 near Muleshoe.

### Cochran County

Morton	26	2142CST 2230CST			0	0			Flash Flood
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Morton police department reported Main St. partially closed due to flooding.

### Yoakum County

8 E Plains	27	0744CST 0830CST			0	0			Flash Flood
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Flooding resulted in the closure of intersection Highway 214 and Farm-to-Market Road 1939.

### Terry County

3 N Brownfield	30	1728CST			0	0		25K	Hail (1.00)
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### Terry County

2 S Brownfield	30	1740CST			0	0			Thunderstorm Wind (G52)
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Texas Tech West Texas Mesonet station measured a gust to 60 mph.

### Terry County

Brownfield	30	1801CST 2000CST			0	0			Flash Flood
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Flooding in Brownfield closed several streets.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## TEXAS, South Panhandle

### Dickens County

Spur	30	1806CST 2000CST			0	0			Flash Flood
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Widespread flooding was reported in and around Spur. A car was stranded in town.

### Lynn County

10 W Tahoka	30	1855CST 2300CST			0	0			Flash Flood
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Flood waters washed a car off the road west of Tahoka on Highway 380.

### Garza County

Southland	30	1904CST 2000CST			0	0			Flash Flood
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Flooding was reported in and around Southland.

### Lynn County

5 S Tahoka	30	1905CST 2300CST			0	0			Flash Flood
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Numerous reports of flooding was reported in and around Tahoka.

### Kent County

Jayton	30	1915CST 2015CST			0	0			Flash Flood
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Several reports of flooding occurred in and near Jayton. A few roads were briefly closed.

### King County

7 S Guthrie	30	1915CST			0	0			Thunderstorm Wind (G61)
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Strong winds blew down trees south of town.

### Garza County

Post	30	1930CST 2300CST			0	0			Flash Flood
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Several vehicles were stranded to due flood waters in and around Post.

### Lynn County

Tahoka	30	1930CST			0	0			Hail (1.00)
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### Dickens County

Dickens	30	2104CST 2300CST			0	0			Flash Flood
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Many county roads in and around Dickens were flooded.

## TEXAS, Southeast

### Orange County

Vidor	18	1640CST			0	0			Hail (0.88)
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### Jefferson County

Beaumont	18	1708CST			0	0			Hail (0.75)
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### Jefferson County

Nederland	23	2050CST 2200CST			0	0	10K		Flash Flood
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Heavy rains caused flood waters to enter one home in Nederland.

### Orange County

Bridge City	23	2050CST 2200CST			0	0	10K		Flash Flood
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Heavy rains caused flood waters to enter one home in Bridge City.

## TEXAS, West

### Ector County

Odessa	01	1450CST 1512CST			0	0	0	0	Flash Flood
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Several reports were received from the public and a local newspaper reporter of urban flooding in Odessa during the afternoon of the 1st. Over six inches of water was reported flowing through the intersection of Second and Jackson Streets in downtown, and more than a foot of water crossed the intersection of Sixteenth and Harless on the city's southwest side. The strong thunderstorm that produced a burst of heavy rainfall over the city quickly dissipated and the flooding receded within half an hour.

### Ector County

1 ENE Gardendale to 3 ENE Gardendale	01	1720CST 1830CST			0	0	0	0	Flash Flood
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A second thunderstorm persisted for nearly an hour over State Highway 158 in northeastern Ector County during the evening of the 1st. Doppler radar estimates indicated that up to two inches of rain fell just northeast of Gardendale. At least one foot of water inundated several secondary roads.



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## TEXAS, West

Scattered convection develop over the west Texas Upper Trans Pecos and the western Permian Basin late on the 1st. Two isolated strong thunderstorms produced very heavy rainfall over Ector County and resulted in localized flash flooding.

### Reeves County

1 S Saragosa to  
3 SE Saragosa

21 1415CST 0 0 25K 0 Flash Flood  
1600CST

Reeves County officials reported extensive flash flooding along Interstate 10 near mile marker 214. Low spots along Texas Highway 17 were inundated by flood waters between Saragosa and the interstate. Both east and west-bound service roads also were flooded. High water threatened a Fina Gas Station near the intersection of Texas Highway 17 and Interstate 10. Up to three feet of water flowed through the business's parking lot. The Texas Department of Transportation deployed sandbags around the structure to protect it from the flood waters.

### Gaines County

Higginbotham

21 1500CST 0 0 0 0 Hail (1.00)

### Gaines County

12 NW Seminole to  
Seagraves

21 1730CST 0 0 20K 0 Flash Flood  
2045CST

Strong to severe thunderstorms trained over the northern half of Gaines County and resulted in very heavy rainfall and flash flooding. At 17:30 LST officials reported that high water flowed over Texas Highway 214 and swept a vehicle off of the road northwest of Seminole. Rescue crews had to remove the driver from the vehicle in swiftly moving flood waters. During the next three hours numerous roadways and highways also were flooded near Seagraves. Heavy rainfall also produced flowing flood waters that made U.S. Highway 385/62 impassable ten miles north of Seminole.

Strong to severe thunderstorms developed over the west Texas Upper Trans Pecos and the western Permian Basin during the late afternoon and evening of the 21st. Extensive flash flooding was reported in southern Pecos County near Interstate 10. Additional thunderstorm activity produced quarter size hail and flash flooding in Gaines County, where a motorist was swept off of the road. No injuries were reported.

### Midland County

6 SE Midland to  
12 W Midland

23 1825CST 0 0 2K 0 Hail (1.00)  
1923CST

A severe multicell thunderstorm erupted over central Midland County during the early evening of the 23rd and propagated northwest over Midland International Airport. At 18:25 CST, nickel size hail and strong winds broke small limbs off trees at several residences six miles southeast of Midland. At 18:53 CST nickel to quarter size hail began to fall at the National Weather Service Forecast Office near Midland International Airport. The hail persisted for ten minutes and covered the ground. A resident on the Midland/Ector County line reported nickel size hail at 19:23 CST.

### Midland County

1 ESE (Maf) Midland Ir  
12 W Midland

23 1855CST 0 0 25K 0 Thunderstorm Wind (G53)  
1924CST

Several units at a trailer home dealership suffered wind damage southeast of Midland International Airport. The Automated Surface Observation System located at the airport recorded severe thunderstorm wind gusts up to 61 MPH. A large flag pole also was broken by the winds near the intersection of Midland County Road 60 and Farm to Market Road 1788.

### Ector County

5 ESE Gardendale

23 1923CST 0 0 0 0 Hail (0.88)

A resident on the Ector/Midland County line reported nickel size hail.

### Midland County

2 WSW Greenwood to  
2 NW Greenwood

23 1940CST 0 0 0 0 Flash Flood  
2100CST

Storm spotters reported high water flowing over several county and farm to market roads between Interstate 20 and Greenwood.

### Midland County

1 S (Maf) Midland Intl

23 1955CST 0 0 0 0 Flash Flood  
2130CST

National Weather Service employees encountered half a foot of running water over the Interstate 20 service road on the south side of Midland International Airport.

An isolated severe multicell thunderstorm produced large hail and damaging thunderstorm winds as it propagated northwest across Midland County. The vicinity of Midland International Airport was hardest hit by the storm with quarter size hail and damaging winds.

### Ector County

Odessa

25 0910CST 0 0 30K 0 Flash Flood  
1200CST

A broad complex of showers and thunderstorms moved northeast over the west Texas Permian Basin on the 25th. As heavy rainfall from this activity spread over Odessa, dangerous flash flooding conditions developed rapidly in the city streets. At 09:10 CST fire department personnel conducted high water rescues at the intersection of Tanglewood and Pembroke. Numerous roadways across the city were quickly closed due to flood waters. Motorists also were rescued from stalled vehicles near the intersection of Tom Green and University Avenue. No injuries were reported.

## Storm Data and Unusual Weather Phenomena

[illegible]

**TEXAS, West**  
**Midland County**  
**Midland to**  
**4 E Midland**

Storm spotters, law enforcement officials, and the local media reported several instances of flash flooding across Midland. At 10:00 CST Texas Department of Public Safety troopers and Midland Fire Department personnel rescued a woman and three children from a vehicle submerged in three feet of water near the intersection of West Industrial Avenue and South Midland Drive.

In addition, over a foot of water covered the Loop 250 access road between Thomason and State Highway 191 near Grandecom Stadium. Over two feet of water covered the Interstate 20 access road at the intersection of Farm to Market Road 1130. Two traffic accidents on Interstate 20 in Midland were indirectly related to the wet weather when cars lost control on the wet pavement. One such accident resulted in an injured motorist. No injuries or fatalities resulted from the flash flooding.

Local officials reported that flash flooding resulted in high water running down Avenue E in Snyder. The street was closed to traffic.

Isolated strong to severe thunderstorms erupted over the mountainous terrain of southwest Texas during the afternoon hours of the 25th. The National Park Service reported quarter size hail near Study Butte.

Very dangerous flash flooding conditions developed rapidly on the morning of the 26th across Jeff Davis County. At 07:55 CST the Fort Davis Fire Department reported two persons stranded by flood waters in Short Canyon, thirteen miles north-northeast of Fort Davis. The fire department also reported that work was underway to rescue two additional stranded campers in Madera Canyon, ten miles west-southwest of the McDonald Observatory.

Flooding along Olympia Creek was reported to have receded by mid afternoon. A second flood wave, however, raged through the creek and inundated the same portion of State Highway 118 north of the Fort Davis around 16:45 CST. The water again receded making the highway passable by 19:35 CST.

A trained spotter reported flood waters crossing State Highway 118 twenty miles south of Alpine at 08:25 CST. Flash flooding also inundated numerous rural secondary roadways at Terlingua Ranch near State Highway 118 in southern Brewster County.

Before the heavy rainfall ended across Brewster County during the late afternoon, additional flash flooding was reported near Terlingua. Law enforcement officials reported that several low water crossings there flooded and several local highways were impassable.

## Storm Data and Unusual Weather Phenomena

[illegible]

**TEXAS, West**

**Reeves County**

9 NNW Orla to Orla	26	1030CST 1900CST	0	0	25K	0	Flash Flood
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9 NNW Orla to Orla	26	1030CST 1900CST	0	0	25K	0	Flash Flood
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At 10:30 CST residents in Orla reported high water that inundated yards and threatened homes. Water in the streets of Orla flowed one foot deep. No major damage was reported.

A National Weather Service Cooperative Observer west of Red Bluff Dam reported flood waters crossing U.S. Highway 285 in northern Reeves County at 10:40 CST. Five to six feet of water was reported flowing over County Road 447 five miles north of Orla at 15:45 CST. At that time, the Red Bluff Dam Cooperative Observer reported a forty-eight hour rainfall total of five inches.

The heavy rainfall ended over most of Reeves County by late afternoon. Runoff continued to result in flash flooding through mid evening. The last report that was received indicated that three feet of water continued to flow over County Road 447 north of Orla at 18:00 CST.

**Culberson County**

Van Horn to Pine Spgs	26	1041CST 1700CST	0	0	0	0	Flash Flood
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Van Horn to Pine Spgs	26	1041CST 1700CST	0	0	0	0	Flash Flood
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At 10:41 CST National Park Service employees reported flash flooding that resulted in high water over Texas Highway 54 at several locations between Van Horn and Pine Springs. A later report from the National Park Service indicated that the water was flowing up to two feet deep at some locations by 15:15 CST.

Heavy rainfall exited Culberson County by late afternoon. The flash flooding quickly receded along Texas Highway 54, but debris was reported covering portions of the highway, where flooding had occurred at 17:30 CST.

### Loving County

19 NW Mentone to 1 N Mentone	26	1100CST 1415CST	0	0	0	0	Flash Flood
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19 NW Mentone to 1 N Mentone	26	1100CST 1415CST	0	0	0	0	Flash Flood
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Several public reports indicated flash flooding across western Loving County. At 11:00 CST, at least one foot of water was reported flowing over Farm to Market Road 652 in the northwestern parts of the county. Additional flooding was reported at 11:45 CST along County Road 300 one mile north of Mentone, where flowing water up to one foot deep crossed the road.

**Gaines County**

14 W Seagraves	26	1455CST	0	0	15K	0	Flash Flood
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14 W Seagraves	26	1455CST	0	0	15K	0	Flash Flood
	27	0100CST					

Flash flooding inundated Texas Highway 214 near the Gaines/Yoakam County line. At 14:55 CST a car was washed off of the highway just south of the county line by flowing flood waters. Local emergency officials closed the highway after the driver of the vehicle was brought to safety and it was not re-opened until the water receded after midnight CST.

**Ector County**

Odessa	26	1650CST	0	0	0	0	Flash Flood
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Odessa	26	1650CST 1930CST	0	0	0	0	Flash Flood
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Several city streets were inundated by urban flash floods across the south side of Odessa. More than two feet of water flowed through portions of Tom Green and Muskeegum Streets between 8th and 15th Streets. Parts of 11th and 12th Streets were impassable with nearly three feet of water. The intersection of Meadow and Murphy also was flooded with two feet of flowing water.

**Winkler County**

1 SW Wink	26	1650CST	0	0	0	0	Flash Flood
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1 SW Wink	26	1650CST 2100CST	0	0	0	0	Flash Flood
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Texas State Route 115 was barricaded and closed to traffic through much of the evening due to flash flooding caused by a low water crossing that flooded and inundated the highway near Wink.

**Andrews County**

20 WNW Andrews to	26	1730CST	0	0	0	0	Flash Flood
27 WNW Andrews		2000CST					

20 WNW Andrews to	26	1730CST	0	0	0	0	Flash Flood
27 WNW Andrews		2000CST					

Trained storm spotters reported that flood waters intermittently covered Texas Highway 176 in western Andrews County. Half a foot of flowing water crossed the highway at several locations between twenty and twenty-seven miles west-northwest of the city.

**Ward County**

Monahans	26	1734CST	0	0	25K	0	Flash Flood
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Monahans	26	1734CST 1945CST	0	0	25K	0	Flash Flood
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Multiple reports from Monahans indicated that heavy rainfall produced flash flooding that quickly inundated city streets and threatened several residences. Local law enforcement officials reported that city streets remained barricaded at 19:00 CST. Flood waters in the city receded by late evening. No major damage was reported.

**Howard County**

Big Spring	26	1745CST	0	0	100K	0	Heavy Rain
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Big Spring	26	1745CST 1820CST	0	0	100K	0	Heavy Rain
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Heavy rainfall caused ponding of water on many driving surfaces near Big Spring. A semi-truck hydroplaned off of Interstate 20 on the north side of the city. A second semi-truck lost control and jack-knifed when the driver tried to avoid a collision with emergency workers responding to the first incident.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## **TEXAS, West**

### **Howard County**

#### **Big Spring**

26     **1755CST  
2000CST**     0     0     20K     0     **Flash Flood**

The Big Spring Police Department barricaded several city streets due to flowing flood waters that resulted from flash flooding. The most significant flooding was reported in the city's northwest side. At 18:43 CST a motorist was stranded in flood waters at the 1400th block of Sixth Street. Northwest Second and Benton Streets also were closed.

### **Gaines County**

#### **15 W Seminole to**

#### **13 W Seminole**

26     **1915CST**     0     0     0     0     **Flash Flood**  
27     **0030CST**

Portions of U.S. Highway 62/180 were impassable due to flowing flood waters west of Seminole. Numerous secondary roads also were inundated in the immediate area.

### **Dawson County**

#### **Lamesa**

26     **1950CST  
2300CST**     0     0     0     0     **Flash Flood**

Several locations were inundated by flood waters in Lamesa. Flash flooding caused high water to flow through Forest Park and along North Main Street.

Tropical-like rainfall occurred over portions of west Texas during the last weekend in September. On Sunday the 26th, widespread flash floods resulted from heavy rains that accompanied a complex of warm topped convection that propagated slowly from the mountains of southwest Texas and the Big Bend northeast across the Permian Basin.

A sudden onset of dangerous flash flooding conditions at sunrise caught campers by surprise in the Davis Mountains. At least four people were isolated by raging flood waters at two camp sites in rural portions of that county. Campers at one site were stranded for nearly twenty-four hours before a rescue helicopter was used to lift them to safety.

The threat of significant flash flooding spread northeast across the Upper Trans Pecos and the west Texas Permian Basin through the afternoon and evening hours. This resulted in dangerous driving conditions across portions of the area. A car was swept off of a highway by flood waters in Gaines County during the early evening hours. Serious injuries or deaths were narrowly avoided when two semi-trucks lost control and hydroplaned off of a rain soaked Interstate 20 in Howard County. One truck barely missed emergency workers who were attending to the initial accident.

The heavy rainfall began to subside across most of the region by late evening on the 26th. Flash flooding continued in some locations as runoff persisted through much of the night. No injuries were reported across the area.

### **Gaines County**

#### **8 W Seminole to**

#### **8 E Seminole**

27     **0600CST  
1000CST**     0     0     0     0     **Flash Flood**

Before sunrise on Monday the 27th, thunderstorms again initiated over the Permian Basin. Heavy rainfall from this activity quickly led to flash flooding over saturated grounds. Local law enforcement officials reported flash flooding at several locations along U.S. Highway 180 in the vicinity of Seminole. Between one and two feet of flowing water was reported over a half mile stretch eight miles east of Seminole. The intersection of Farm to Market Road 1429 and U.S. Highway 180 also was inundated by flood waters six miles east of the city. High water also made a stretch of the same highway impassable eight miles west of Seminole during the late morning hours.

### **Gaines County**

#### **8 W Seagraves to**

#### **Loop**

27     **0640CST  
1230CST**     0     0     0     0     **Flash Flood**

Texas Highway 83 also was affected by flash flooding in northern Gaines County. At 06:40 CST local officials reported flowing flood waters over the highway eight miles west of Seagraves. Hazardous driving conditions spread east along that route through the morning hours as the heavy rainfall slowly propagated east. Up to two feet of water covered the intersection of Texas Highway 83 and U.S. Highway 385 in Seagraves. Impassable conditions also were reported east along Texas Highway 83 near Loop.

### **Borden County**

#### **14 W Gail**

27     **1010CST  
1130CST**     0     0     0     0     **Flash Flood**

The Dawson County Sheriff's Office reported flash flooding along U.S. Highway 180. Up to eight inches of flowing flood waters covered the highway on the Dawson/Borden County line.

### **Dawson County**

#### **4 ESE Lamesa to**

#### **16 E Lamesa**

27     **1010CST  
1130CST**     0     0     0     0     **Flash Flood**

The Dawson County Sheriff's Office reported flash flooding along U.S. Highway 180 from four miles east-southeast of Lamesa to the Dawson/Borden County line. Portions of the highway were covered by up to eight inches of flowing flood waters.

A pre-dawn round of thunderstorms resulted in another round of flash flooding across the northwestern Permian Basin of west Texas. Several major highways were closed due to high water.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## TEXAS, West

### Andrews County

#### Andrews

27 1630CST  
1900CST 0 0 25K 0 Flash Flood

Thunderstorms and heavy rain again erupted over west Texas during the afternoon of the 27th. Saturated ground conditions were first aggravated by downpours over Andrews. Urban flash flooding quickly ensued and several vehicles stalled in flooded city streets. The Andrews Fire Department conducted at least one high water rescue. No injuries were reported.

### Ward County

#### 20 SSE Monahans to 22 SSE Monahans

27 2110CST  
2330CST 0 0 0 0 Flash Flood

Trained spotters reported high water flowing over Farm to Market Road 871 in southeast Ward County. Several secondary roadways also were inundated by flood waters.

### Ector County

#### 5 SSE West Odessa to West Odessa

27 1925CST  
28 1500CST 0 0 2M 0 Flash Flood

A small linear convective complex developed over western Ector County during the early evening hours. The complex persisted and remained nearly stationary for almost two hours. Very intense rainfall fell over Monahans Draw near West Odessa.

The first reports of flash flooding indicated that high water rendered Farm to Market Road 866, Texas Highway 302, and Interstate 20 impassable. Up to six feet of water was reported crossing low lying areas of Farm to Market Road 866 just north of the Interstate 20 junction. Several vehicles became stalled in high water flowing across the interstate, resulting in high water rescues of stranded motorists.

By late evening the swollen Monahans Draw, usually a dry depression, inundated residential areas in West Odessa. The hardest hit areas were near Third and Damascus Streets. The most extensive damage occurred to several trailer parks in the Westcliff, Knox Village, and Manor subdivisions. Rescue crews from three fire departments worked well into the night to remove distressed residents from homes and vehicles that were threatened by high water. One fire engine stalled in the flood waters. Many families were displaced to emergency shelters in other portions of the city and in Odessa. More than forty homes suffered serious damage. Four trailer homes and two permanent homes were destroyed. Another fifteen single family homes experienced major damage from the flood waters.

Thunderstorms dissipated over Ector County shortly before midnight CST. This brought a temporary reprieve from the excessive rainfall. Runoff, however, continued to present a threat of flash flooding through the nighttime hours. As a result local emergency management officials continued to report major flash flooding along Monahans Draw through the night.

During the pre-dawn hours of Tuesday the 28th, another band of showers and thunderstorms moved north across Ector County. Brief heavy rainfall from this activity aggravated the flash flood situation. By 06:35 CST local officials were again at work to evacuate residents near the intersections of Tripp and Twenty-Third Streets and Tenth and Redondo Streets. Between two and three feet of water was reported rushing through those city streets and threatened numerous homes. At least three high water rescues also were conducted to bring stranded motorists to the safety of dry ground.

Rainfall ended over Ector County by 09:00 CST. Significant runoff and associated flash flooding of low lying areas prevented access to much of the city through the early afternoon hours.

### Ector County

#### Odessa

27 2000CST  
28 1200CST 0 0 30K 0 Heavy Rain

Heavy rainfall over Odessa during the late evening and overnight hours Monday the 27th and the early morning hours of Tuesday the 28th caused the flat-topped roof of a business to collapse in downtown. Although extensive damage occurred to the business, no injuries were reported.

### TXZ061

#### Ector

28 1500CST  
1800CST 0 0 250K 0 Flood

Despite an end of the thunderstorms and heavy rainfall over Ector County during the late morning hours, significant flood waters remained in several West Odessa neighborhoods. It took several additional hours for flooding to recede.

Scattered thunderstorms developed and produced locally very heavy rainfall over the western parts of the west Texas Permian Basin during the late afternoon and evening of the 27th. Many West Odessa residents were displaced from their homes during the late evening hours when flash flooding along Monahans Draw devastated parts of the city. No casualties were reported, but at least twenty families were left homeless.

# Storm Data and Unusual Weather Phenomena

September 2004

									September 2004
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
TEXAS, West									
Howard County 3 NNW Knott to 4 W Coahoma	28	0725CST 1330CST			0	0	0	0	Flash Flood
	The Texas Department of Transportation reported flash flooding along several roadways in northwestern Howard County. Between 07:25 and 07:50 CST local officials and public reports indicated that one mile of Farm to Market Road 2230 was inundated by flood waters near the intersection of County Road 50 north of Knott.								
	The public also reported submerged roadways west of Coahoma. Midway Road and South Moss Lake Road were rendered impassable due to high water. Local highway officials closed the roadways shortly afternoon CST.								
Midland County 4 SW Midland to Midland	28	0830CST 1030CST			0	0	20K	0	Flash Flood
	At 08:30 CST running water was reported flowing over the intersection of Loop 250 and Business Interstate 20. The local media reported a vehicle submerged under an overpass at the intersection of Midland Drive and Industrial at 08:45 CST. Fire department crews rescued a woman trapped in a water stalled mini-van on West Industrial Avenue. No injuries were reported.								
	Flash flooding across the central Permian Basin of west Texas resumed during the mid to late morning hours when a band of showers and thunderstorms developed and propagated across the area. Several rural and secondary roadways were inundated by flood waters in Howard County. In addition, dangerous urban flash flooding resulted in at least tw o submerged vehicles in Midland.								
Culberson County 4 S Pine Spgs	29	1922MST 1923MST			0	0	0	0	Thunderstorm Wind (G50)
Reeves County Orla	29	2320CST			0	0	0	0	Hail (0.75)
	Isolated strong to severe thunderstorms developed over the west Texas Upper Trans Pecos and in vicinity of the Guadalupe Mountains during the late evening hours of the 29th. One thunderstorm produced severe wind gusts near Guadalupe Mountains National Park. An Automated Surface Observation System located at Guadalupe Pass near U.S. Highway 62/180 recorded a peak gust of 58 MPH. A second severe storm produced hail up to the size of pennies in Orla.								
Dawson County 10 NNE Lamesa	30	0825CST 1000CST			0	0	0	0	Flash Flood
	Convective activity lingered over the northern Permian Basin into the morning hours of the 30th. Local officials reported that flash flooding briefly resulted in over half a foot of water flowing across a portion of U.S. Highway 87 north of Lamesa.								
Reeves County 2 S Saragosa to Saragosa	30	1725CST 1726CST			0	0	0	0	Hail (1.00)
	A Texas Department of Public Safety trooper reported penny to quarter size hail and "high" winds from the intersection of Interstate 10 and Texas Highway 17 north to Saragosa.								
Ward County Grandfalls	30	1817CST 1821CST			0	0	25K	0	Hail (1.75)
	Law enforcement officials reported quarter to golfball size hail in Grandfalls. Minor damage to vehicles was reported.								
Ward County Grandfalls to 2.5 ESE Grandfalls	30	1820CST 1822CST			0	0	75K	0	Thunderstorm Wind (G65)

Strong to severe thunderstorms over Pecos County spawned a left moving (anticyclonic) severe storm that rapidly propagated over the town of Grandfalls. Quarter to golfball size hail was reported in addition to damaging winds. Five power poles were snapped along State Route 11 just southeast of town. In town, an abandon mobile home was rolled by the winds and destroyed while the roof of another mobile home in the southwest portions of the community was blown onto a nearby pickup truck. Several trees were uprooted and a historic church also sustained serious roof damage.

A damage survey conducted by the National Weather Service concluded that the severe winds that produced the damage was uniform in direction, blowing debris from the southwest to the northeast. The damage swath covered an area three miles wide. These observations were consistent with the occurrence of a large downburst, or macroburst.

Thunderstorms erupted along the Davis Mountains in southwest Texas during the afternoon and evening of the 30th. Several of these thunderstorms became severe as they propagated northeast across the Trans Pecos and produced large hail and damaging winds. The most significant impacts from the storms occurred in the community of Grandfalls. Damaging winds destroyed two trailer homes and partially removed the roof on a historic church.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## TEXAS, Western North

### Hardeman County

Chillicothe 30 1947CST 0 0 7.5K Thunderstorm Wind (G52)

A tree fell over a power line in town.

## UTAH, East

UTZ022>025-027>029 Southeast Utah - Eastern Uinta Mountains - Eastern Uinta Basin - Tavaputs Plateau - Grand Flat And Arches - La Sal & Abajo Mountains - Canyonlands / Natural Bridges

01 0000MST 0 0 Drought  
30 2359MST

Remnants of an eastern Pacific Hurricane transported some moisture across eastern Utah early in the month. However, the precipitation was not sufficient to alleviate the severe to extreme drought conditions. Please see the October 2004 Storm Data publication for a continuation on this drought situation.

### UTZ023

#### Eastern Uinta Mountains

01 1300MST 0 0 Wildfire  
05 1600MST

This fire was named the Mail Draw Fire and occurred on BLM property 25 miles northeast of Vernal. The fire consumed 2,800 acres of timber, pinyon pine, juniper, and sage brush. The estimated cost of fighting the fire was 915 thousand dollars.

### San Juan County

Fry Canyon to 21 NW Fry Canyon 19 1600MST 0 0 Flash Flood  
1800MST

Heavy rainfall resulted in a wall of water up to 6 feet deep roaring down White Canyon. This flash flood was observed by a number of back country travelers, including trail guides.

### UTZ023-028

#### Eastern Uinta Mountains - La Sal & Abajo Mountains

20 1500MST 0 0 Winter Weather/Mix  
22 0500MST

An early season storm produced snowfall amounts of 1 to 4 inches across the mountains of northeast and southeast Utah.

## UTAH, West and Central

NOT RECEIVED.

## VERMONT, North and Central

NONE REPORTED.

## VERMONT, South

### VTZ013

#### Bennington

18 1320EST 0 0 Flood  
1531EST

The Walloomsac River exceeded its flood stage of 7.0', cresting at 7.21' at 14:30 EST on 9/18/04 at the Bennington gage.

## VIRGIN ISLANDS

### VIZ001>002

#### St. Thomas / St. John And Adjacent Islands - St. Croix

14 0000AST 0 0 6.2M Tropical Storm  
17 2359AST

Tropical Storm Jeanne affected the territory with high winds and torrential rains, leaving downed trees, utility poles, power outages, and widespread flooding in its wake. The U.S. virgin Islands were declared a major disaster area. Jeanne caused 6.4 million in damage to infra structure. Jeanne dumped over 12 inches of rain in St. Thomas during the three day period from September 14-17. At the St. Croix airport, 6.06 inches were recorded during the same period, although a spotter in a location north of Fredericksted, at Butler Bay, recorded 8.73 inches for the 24 hour period ending at 6 am on September 16. On St. John, a spotter at Rainbow Hill, Cruz Bay, recorded 10.39 inches for the period from 630 am on Sep. 14th through 630 am on Sep. 17th. The maximum 24 hour rainfall at Charlotte Amalie of 9.25 inches has a return frequency of 25 years. The Turpentine Run at Mt. Zion station in St. Tomas, set a new record of 8.65 feet, which broke the previous record of 7.28 feet set in 1995. On St. Thomas, about 20 people had to be rescued early Thursday morning when flood waters overtook areas of Brookman Road, Estate Nazareth, and Sanchez Town in Nadir. Estate Nadir was hit the hardest when the water swelled out of the runoff channels and overtaxed drainage ditches, causing widespread flooding and erosion. On St Croix, flooding was reported in Gallows Bay, Estate Ruby, Estate Grove Place, Estate Whim, Tide Village, Calquohoun, Midland Road, Mon-Bijou and Frangipani. The rains brought mudslides and forced large rocks onto roadways on Queen Mary Highway. On St John, downed trees, mud and rock slides were reported. The agricultural impact was significant in St. Croix mainly were major flooding occurred. Farmers experienced significant damage and crop losses with bananas, plantains, sugar cane, vegetables and fruit trees. Plants that were not destroyed by the winds eventually overturned due to waterlogged conditions. Winds reports in the U.S. Virgin Islands varied, the St Croix airport recorded sustained





## Storm Data and Unusual Weather Phenomena

Time Local/	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>VIRGINIA, East</u></b>									
<b>Mecklenburg County</b>									
Chase City	17	1545EST			0	0	2K		Thunderstorm Wind (G50)
		Trees down.							
<b>Goochland County</b>									
Manakin	17	1550EST	1	100	0	0	3K		Tornado (F1)
		F1 tornado downed numerous trees.							
<b>Louisa County</b>									
5 NW Louisa	17	1556EST 1558EST	1.5	50	0	0	20K		Tornado (F1)
		F1 tornado downed or snapped off numerous trees. Two house trailers blown into a creek.							
<b>Henrico County</b>									
Short Pump	17	1559EST 1602EST	0.5	150	0	0	15K		Tornado (F0)
		F0 tornado damaged some homes in the Hampshire Subdivision, off Nuckols Road. Shingles were torn off of some roofs and garage doors blown in. Also, damage to homes in the Autumnwood Subdivision off of Shady Grove Road.							
<b>Hanover County</b>									
Montpelier	17	1615EST			0	0	2K		Thunderstorm Wind (G50)
		Trees down near Old Ridge Road and Blunt Bridge.							
<b>Hanover County</b>									
Doswell	17	1620EST			0	0	2K		Thunderstorm Wind (G50)
		Trees down.							
<b>Powhatan County</b>									
Powhatan	17	1630EST 1730EST			0	0			Flash Flood
		Portions of Highway 60 flooded. Route 711 closed due to high water.							
<b>Hanover County</b>									
1 N Hanover	17	1640EST	1	50	0	0	2K		Tornado (F0)
		F0 tornado downed trees.							
<b>Caroline County</b>									
1 S Dawn	17	1642EST	1	50	0	0	2K		Tornado (F0)
		F0 tornado downed trees.							
<b>Caroline County</b>									
2 S Golansville	17	1711EST 1713EST	1.5	60	0	0	10K		Tornado (F1)
		F1 tornado downed numerous trees on Friendship Road. Many trees snapped off 10 feet above ground level. One tree fell on a house and caused significant damage.							
<b>Prince Edward County</b>									
Farmville	17	1715EST 1815EST			0	0			Flash Flood
		Street flooding in town. Routes 634 and 636 closed due to high water.							
<b>Caroline County</b>									
3 WNW Port Royal	17	1723EST 1725EST	2	150	0	0	15K		Tornado (F1)
		F1 tornado downed numerous trees near the intersection of Route 615 and Route 728 around Four Winds Golf Course. Many trees snapped off about 10 feet above ground level, and significant damage to 2 homes.							
<b>Cumberland County</b>									
3 SE Ranies Tavern	17	1730EST 1830EST			0	0			Flash Flood
		High water on River Road and Jamestown Road.							
<b>Powhatan County</b>									
2 ESE Subletts	17	1730EST			0	0	2K		Thunderstorm Wind (G50)
		Trees down at Junction of Routes 711 and 288.							
<b>Goochland County</b>									
1 W Oilville	17	1734EST 1736EST	0.2	40	0	0	10K		Tornado (F1)
		F1 tornado damaged a home on Broad Street in the Three Oaks Subdivision. Numerous trees were snapped and blown down. Roof partial blown off house.							

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<b><u>VIRGINIA, East</u></b>									
<b>Greensville County</b>									
3 WNW Kingsberry	17	1735EST	0.8	100	0	0	5K		Tornado (F0)
									F0 tornado damaged a few homes and a shed along Old Brunswick Road/Route 607. Trees down in different directions.
<b>Amelia County</b>									
2 W Mannboro	17	1830EST 1930EST			0	0			Flash Flood
									State Route 615 closed due to high water. High water also on Routes 360 and 38.
<b>Goochland County</b>									
Manakin	17	1830EST 1930EST			0	0			Flash Flood
									High water at Manakin and Hermitage Streets, and on Broad Street Road in town of Goochland.
<b>Hanover County</b>									
3 SSW Ashland	17	1900EST 2000EST			0	0			Flash Flood
									High water reported on Greenwood Church Road, Rosmarin Road, Mountain Road, Auburn Mill Road, and Stone Horse Road.
<b>Richmond (C)</b>									
Richmond	17	1930EST 2015EST			0	0			Flash Flood
									Flooding reported on New Kent Road, Jennie Scher and Stoney Run Roads, Fairmount Road, and Mechanicsville Turnpike.
<b>Mathews County</b>									
Peary	17	2130EST			0	0	15K		Thunderstorm Wind (G61)

An old barn and small shed destroyed by straight-line winds. Winds estimated between 60 and 70 mph.

## **VIRGINIA, Extreme Southwest**

NONE REPORTED.

## **VIRGINIA, North**

NOT RECEIVED.

## **VIRGINIA, Northwest**

NONE REPORTED.

## **VIRGINIA, Southwest**

VAZ022

Roanoke

08 0030EST

0 0

Flood

09 0200EST

At Roanoke, the Roanoke River rose above the 10.5 foot flood stage and crested at 12.72 feet at 02:15 am on the 8th. This resulted in moderate flooding.

VAZ012-022-024-033-043

Wythe - Roanoke - Rockbridge - Franklin - Henry

08 0430EST

0 0

Flood

1815EST

The remnants of Tropical Depression Frances brought flooding rains to portions of Southwest Virginia September 8th.

Across Henry County, numerous creeks and streams flooded, leading to road closures. Some roads were damaged as well by the floodwaters. A few homes had water damage in their basements.

In Rockbridge County, as much as 9 inches of rain led to flooding of creeks and streams. Roads were closed due to high water in the Colliertown and Natural Bridge areas. In addition...five homes had to be evacuated near Cave Mountain Lake due to flooding.

Around Roanoke County, including the cities of Roanoke and Salem, flooding of creeks resulted in water covered roads and road closures. Voluntary evacuations occurred at a trailer park in Salem.

In Franklin County, as much as 5 to 6 inches of rain in 10 hours led to flooding of many streams and creeks, with numerous road closures and evacuations. Both the Callaway Elementary School and Callaway Fire Department had to be evacuated due to flooding of Greens Creek.

In Wythe County, heavy rains brought flooding to many parts of the county resulting in road closures.

## Storm Data and Unusual Weather Phenomena

Time Loss/ Length	Path Length	Path Width	Number of Persons	Estimated Damage
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Location	Date	Standard	(Miles)	(Yards)	Killed	Injured	Property	Crops	Character of Storm
<b><u>VIRGINIA, Southwest</u></b>									
<b>Franklin County</b>									
Rocky Mt	08	1023EST			0	0			Thunderstorm Wind (G50)
<b>Bedford County</b>									
Stewartsville	08	1200EST 1430EST			0	0			Flash Flood
<b>Campbell County</b>									
Evington	08	1315EST			0	0			Thunderstorm Wind (G50)
<b>Buckingham County</b>									
2 WNW Gold Hill	08	1530EST	0.8	33	0	0			Tornado (F0)
The remnants of Tropical Depression Frances brought a brief tornado, flash flooding, and a few severe thunderstorms to portions of Southwest Virginia during the late morning and early afternoon of the 8th.									
In Buckingham County, an F0 tornado briefly touched down 2 miles WNW of Gold Hill, damaging and snapping numerous trees.									
In Bedford County, flash flooding near Stewartsville closed Highway 619.									
In Franklin County, a severe thunderstorm brought down several trees in Rocky Mount.									
In Campbell County, a severe thunderstorm downed trees across Route 683 near Evington.									
<b>VAZ044</b>									
Pittsylvania	09	0100EST 1500EST			0	0			Flood
At Danville, the Dan River rose above the 17.0 foot flood stage at 01:00 am on the 9th, and crested at 18.51 feet at 15:00 pm on the 9th.									
<b>VAZ058</b>									
Halifax	10	0000EST 0700EST			0	0			Flood
At South Boston, the Dan River rose above the 19 foot flood stage at 01:00 am on the 10th and crested at 07:00 am on on the 10th.									
At Paces, the Dan River rose above the 20 foot flood stage around Midnight on the 10th and crest at 20:17 feet at 04:15 am on the morning on the 10th.									
<b>VAZ047</b>									
Buckingham	10	0500EST 1200EST			0	0			Flood
At Brems Bluff, the James River rose above the 19 foot flood stage at 05:00 am on the 10th, cresting at 19.2 feet at 07:00 am on the 10th. The river fell below flood stage at 12:00 pm on the 10th.									
<b>Henry County</b>									
1 N Fieldale to 1 W Oak Level	17	1104EST 1114EST	7.1	440	0	4			Tornado (F2)
A tornado touched down near Fieldale at 1104 EST. The F1 tornado crossed U.S. Highway 220 turning over 2 tractor-trailer trucks and 2 passenger vehicles. All 4 drivers suffered minor injuries. The tornado damage patch widened to a quarter mile, and strengthened to F2 as it approached and struck a factory. At this location, around 40 vehicles were severely damaged or destroyed. The factory experienced significant damage. The tornado then proceeded north and entered a residential subdivision, but only minor roof and tree damage occurred here. The tornado path became intermittent as it continued north and the damage was limited to trees. The tornado crossed into Franklin County at 1114 EST.									
<b>Franklin County</b>									
2.8 ENE Henry to 2.5 NE Henry	17	1114EST 1117EST	1.7	25	0	0			Tornado (F0)
The remnants of the Henry County tornado briefly touched down at F0 strength as it crossed into Franklin County. Damage was restricted to several large trees, one of which landed on a residential garage.									

# Storm Data and Unusual Weather Phenomena

September 2004

September 2004									
Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
<b><u>VIRGINIA, Southwest</u></b>									
<b>Bedford County</b>									
1.5 SE Stewartsville to 2 NE Stewartsville	17	1212EST 1217EST	3	300	0	0	Tornado (F2)		
At 1212 EST, an F0 tornado touched down near Dickerson Road, and the width was less than 50 yards. The tornado damage path widened and varied from 100 yards to as much as 300 yards, as it did moderate to strong F1 damage to trees. A few homes suffered only minor damage to shingles and roofs, mainly due to trees falling on them. As the F1 tornado crossed Highway 24 at 1215 EST, it continued to damage trees, and was about 75 yards wide. A poorly constructed building was demolished. As the tornado moved north, it continued to down trees. Also, a car was pivoted in a driveway but undamaged. Minor structural and roof damage to homes occurred, as the tornado increased to a weak F2. The tornado weakened to F0 by 1217 EST, downing more trees along County Road 619.									
<b>Pittsylvania County</b>									
.5 WNW Straightstone to .5 NW Straightstone	17	1324EST 1326EST	0.3	25	0	0	Tornado (F0)		
A short lived F0 tornado touched down 1/2 mile WNW of Straightstone, in a hay field. About a quarter mile path was found. No damage occurred.									
<b>Campbell County</b>									
3 ENE Rustburg to 3.5 NE Rustburg	17	1354EST 1358EST	1.9	100	0	0	Tornado (F1)		
At 1354 EST, a tornado touched down along Bear Creek Road, 3 miles ENE of Rustburg, causing minor damage. At 1356 EST, the tornado crossed Highway 24, causing extensive tree damage. One tree crushed a small car in a driveway. Minor damage to homes, mainly shingles and eaves. On the north side of Highway 24, the tornado blew the roof off of a detached garage.									
<b>Campbell County</b>									
3.5 WSW Concord to 2.5 NW Concord	17	1359EST 1405EST	3	75	0	0	Tornado (F1)		
A tornado touched down on the east edge of Long Mountain just before crossing County Road 660. Fairly large trees were snapped off or uprooted, but only minor damage occurred to sheds. The tornado proceeded to cross County Road 757, when the damage path became narrower. An aluminum roof of a medium sized shed was torn off and blown about 200 yards. A trampoline was blown up across the roof of a two story house and dropped about 200 yards away. From that point the tornado tracked NNE and produced tree damage, before lifting as it crossed U.S. Highway 460.									
<b>Appomattox County</b>									
5 S Appomattox	17	1312EST			0	0	Thunderstorm Wind (G55)		
<b>Bedford County</b>									
7 NW Bedford City	17	1318EST			0	0	Thunderstorm Wind (G60)		
<b>Appomattox County</b>									
Stonewall	17	1410EST			0	0	Thunderstorm Wind (G55)		
<b>Campbell County</b>									
Rustburg	17	1410EST			0	0	Thunderstorm Wind (G55)		
In Campbell County, trees were downed on 2 vehicles.									
In Appomattox County, many trees were downed.									
In Bedford County, many large trees were downed, near Peaks of Otter.									
Many trees were downed in Galax.									
<b>VAZ032</b>									
Patrick	18	0025EST			0	0	High Wind (G55)		
High winds on the backside of the remnants of Hurricane Ivan, downed many trees across Patrick County early in the morning of the 18th. Some of the trees downed were up to 12 inches in diameter.									
<b>Patrick County</b>									
Stuart	28	0025EST 0515EST			0	0	Flash Flood		
<b>Floyd County</b>									
Floyd	28	0220EST 0800EST			0	0	Flash Flood		
<b>Franklin County</b>									
Boones Mill	28	0510EST 0800EST			0	0	Flash Flood		

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## VIRGINIA, Southwest

### **Roanoke County**

Countywide	28	0640EST 0930EST			0	0			Flash Flood
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### **Patrick County**

Woolwine	28	0645EST 0800EST			0	0			Flash Flood
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### **Salem (C)**

Salem (C)	28	0730EST 0900EST			0	0			Flash Flood
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### **Patrick County**

7 SW Stuart to Stuart	28	0750EST 0800EST			1	0			Flash Flood
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M?MH

### **Patrick County**

Stuart	28	0750EST 0800EST			0	0			Flash Flood
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### **Bedford County**

Countywide	28	0818EST 1115EST			0	0			Flash Flood
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The Remnants of Hurricane Jeanne resulted in heavy rains which created widespread flash flooding on 28th of September in Floyd, Franklin, Patrick, Bedford and Roanoke counties and the City of Salem. One Fatality occurred 7 miles southwest of Stuart in Patrick county at Dry Pond near the North Carolina border. A Mobile home washed off it foundation, one building washed about 150 yards downstream and vehicles washed away. Several roads were closed due to flooding in Floyd, Franklin, Patrick, Bedford and Roanoke counties. Numerous creeks and rivers out of their banks. Mudslides were reported in Boone Mill, Franklin county where southbound Route 220 closed from Magodde Creek.

### **Pittsylvania County**

7 NE Cascade to 4.5 S Callands	28	0358EST 0417EST	12.4	100	0	1			Tornado (F1)
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## WASHINGTON, Northeast

NONE REPORTED.

## WASHINGTON, Northwest

### **Pierce County**

Graham	01	1200PST			0	1	2K		Lightning
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Lightning struck a chain link fence outside a mobile home. The lightning traveled through the metal skirting beneath a mobile home, damaging it and injuring the woman inside.

### **Snohomish County**

Brier	01	1400PST			0	0	5K		Lightning
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A lightning strike destroyed a tree and fried the electrical system in the nearby home.

## WASHINGTON, Southeast

NONE REPORTED.

## WASHINGTON, Southwest

### **Clark County**

1 W Ridgefield	13	1040PST	1	30	0	0			Tornado (F0)
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A tornado ripped through the Ridgefield Wildlife Refuge, lifting and damaging a mobile home office, blowing down trees and snapping large tree limbs. A tree was blown down on top of a car.

### **Clark County**

Ridgefield	13	1100PST 1130PST			0	0			Thunderstorm Wind (G50)
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Strong thunderstorms moved through Clark county generating strong winds. The Clark County Emergency Manager reported numerous trees were blown down at the Ridgefield Wildlife Refuge.

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## WEST VIRGINIA, East

NOT RECEIVED.

## WEST VIRGINIA, North

**WVZ002**

**Brooke**

**08 1600EST**

**0**

**0**

**15K**

**Flood**

**09 0700EST**

Rain from the remnants of Hurricane Frances began early on the 8th and ended early on the 9th. By 5 PM EDT on 8th, there was a mud slide on Pierce Run Rd near Bethany; and Castlemans Run Rd and Hukill Run Rd closed by flooding. By 630 PM, widespread flooding was reported, including Rte 2 in Beach Bottom, and Eldersville Rd in McKinleyville. (FRANCES)

**WVZ003**

**Ohio**

**08 1730EST**

**0**

**0**

**15K**

**Flood**

**09 0700EST**

At 630 PM EDT, roads were flooded in West Liberty. By 9 PM, North Branch of Short Creek had flooded 2 miles south of Wheeling-Ohio County Airport (north of Wheeling). Total rain: 4.5" at Wheeling. (FRANCES)

**WVZ004**

**Marshall**

**08 1750EST**

**0**

**0**

**15K**

**Flood**

**09 1400EST**

At 650 PM EDT, Little Grave Creek flooded Glenwood. By 750 PM, Boggs Run Rd flooded in Benwood when a retaining wall was washed out. By 922 PM, county roads 34 and 54 were flooded near Moundsville. (FRANCES)

**WVZ001**

**Hancock**

**08 1830EST**

**0**

**0**

**20K**

**Flood**

**09 0700EST**

By 730 PM EDT, several basements were flooded in Weirton near Kings Creek; and Gas Valley Rd was closed by flood. (FRANCES)

**WVZ002**

**Brooke**

**17 1156EST**

**0**

**0**

**20M**

**Flood**

**20 0100EST**

Rain from the remnants of Hurricane Ivan started the night of the 16th, and ended just before midnight on the 17th. At 1256 PM EDT, flooding was reported at Bethany; several roads washed out. At 130 PM, flooding began on Kings Creek in Weirton. Force of water blew out windows in the house nearest the creek. Residents had never seen water rise so fast before, nor flow so swiftly. Citizen on personal water craft rescued family from this house, one at a time. At 330 PM on 17th, there was mud slides and creek flooding in Bethany. In Wellsburg, a mud slide destroyed a house; water treatment plant had major damage. About 11 PM EDT on 17th, Buffalo Creek caused widespread destruction in McKinleyville, a town of 300. As of 9 AM on 18th, several roads remained closed by flood. In Brooke Co, total of 225 structures damaged, mostly in Weirton. One school and 2 fire departments had major damage. Route 2 was closed by mud slides, from Weirton to Wheeling. Other roads flooded: Rte 67, Camp Run Rd, Pot Rock Rd, Pierces Run, Grimms Lane, Castlemans Run. Flooding on Ohio River: Wellsburg rose to flood stage (36 ft) at 3 AM EDT on 18th, crested 45.1 at 445 AM on 19th, and fell below flood stage 2 AM EDT on 20th. Total rain: about 7 inches. (IVAN)

**WVZ001**

**Hancock**

**17 1157EST**

**0**

**0**

**36M**

**Flood**

**19 1900EST**

At 1257 PM EDT on 17th, Kings Creek flooded in Weirton, where many businesses wiped out by flooding on Main St and Freedom Way. As of 9 AM EDT on 18th, Rte 2 was still closed by mud slides; several other roads remained flooded. Total of 480 structures damaged or destroyed. Route 2 closed by mud slides from Weirton to Wheeling. Other roads flooded or closed: Route 30, Kings Creek Rd, Shady Glen Rd. Most small stream flooded ended by 7 PM on 18th, the Ohio River flood continued: Wellsburg rose above flood stage (11 ft) at 5 AM EDT on 18th, crested 19.0 ft 2 AM on 19th, and fell below flood stage 7 PM EDT on 19th. New Cumberland WV rose above flood stage (36 ft) at 330 AM EDT on 18th, crested 44.5 at 930 PM on 18th, and fell below flood stage 8 PM EDT on 19th. Total rain: 7 inches. (IVAN)

**WVZ004**

**Marshall**

**17 1330EST**

**1**

**0**

**4.7M**

**Flood**

**20 0800EST**

At 230 PM EDT on 17th, Boggs Run flooded Benwood. By 9 PM on 18th, around Moundsville, 5 roads remained closed because of mud slides; and flooding from Grave Creek was keeping 1 road closed. 79 structures damaged or destroyed, including \$1 million damage to a school. One man was swept away and found in Fish Creek. Most small stream flooding ended by mid afternoon of the 18th, but flooding on the Ohio River continued: Moundsville rose to flood stage 1 AM EDT on 18th, crested 47.0 at 8 AM 19th, and fell below flood stage 8 AM 20th. Powhatan Point (OH) rose above flood stage 2 AM on 18th, crested 45.6 at 9 AM 19th, and fell below flood stage 9 AM EDT on 20th. Both have official flood stages of 37 ft. Total rain: 8.8 inches in Benwood. (IVAN)

M45VE

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## WEST VIRGINIA, North

### **WVZ003**

#### **Ohio**

17 1400EST

20 0400EST

0

0

40M

Flood

At 3 PM EDT on 17th, a trailer court was washed away, about 5 miles north of Wheeling, where Short Creek meets the Ohio River. By 4 PM, many roads were closed by flood around Wheeling, after 7.3 inches of rain. By 9 AM on 18th, major flooding continued on creeks emptying into the Ohio River. A total of 599 structures, were damaged or destroyed, including 1 school. Route 2 was closed by mud slides. Several businesses suffered major damage from flooding of Wheeling Creek, along Route 40, east of downtown Wheeling. Many homes in Wheeling Island were flooded well up into the first floor. Major business establishment on south end of Wheeling Island had much damage. Most small stream flooded ended the evening of the 19th, but flooding on the Ohio River continued: Pike Island rose above flood stage (37 ft) at 1230 AM EDT on 18th, crested 46.3 at 5 AM on 19th, and fell below flood stage 4 AM EDT on 20th. Wheeling rose above flood stage (36 ft) 1230 AM on 18th, crested 45.3 at 5 AM on 19th, and fell below flood stage 5 AM EDT on 20th. Total rain: 9.9 inches near Wheeling. (IVAN)

### **WVZ012**

#### **Wetzel**

18 0000EST

20 0900EST

0

0

7M

Flood

By 1 AM EDT on 18th, Rte 20 closed by flood, from Reader to Folsom; and intersection of Rtes 7 and 20, southeast of New Martinsville. Rte 2 closed because of river flood. Entire 1st floor of Valley High School damaged, since it sits between 2 branches of Fishing Creek. Several businesses in New Martinsville suffered major damage. Much flooding in southern half of county. Total of 152 structures damaged or destroyed. On the Ohio River, Hannibal (OH) rose above flood stage (35 ft) 4 AM EDT on 18th, crested at 41.1 at 9 AM on 19th, and fell below flood stage 10 AM EDT on 20th. (IVAN)

### **WVZ021**

#### **Marion**

18 0000EST

0600EST

0

0

Flood

By 158 AM EDT, many roads were closed by flood in the Mannington area. Total rain: 2.6 inches at Fairview. (IVAN)

### **WVZ022**

#### **Monongalia**

18 0000EST

0600EST

0

0

Flood

By 2 AM EDT, numerous roads were closed by flood from Wadestown to Blacksville. Total rain: 3.5 inches at Jakes Run. (IVAN)

## WEST VIRGINIA, Southeast

NONE REPORTED.

## WEST VIRGINIA, West

### **WVZ006>011-014**

#### **Cabell - Mason - Jackson - Wood - Pleasants - Tyler - Putnam**

08 0854EST

2100EST

0

0

110K

Flood

Remnants of Hurricane Frances caused about a 30 hour rainfall from the afternoon of the 7th into the evening of the 8th. The heaviest rains fell along the Ohio River counties from dawn to midday on the 8th. The low pressure center passed from south to north, through central West Virginia during the late afternoon and early evening on the 8th, before lifting into western Pennsylvania.

Storm total rain amounts of 4 to 5 inches were common. A spotter in Winfield reported a total of 5.6 inches. Cooperative observers at Southside in Mason County, Pea Ridge in Cabell County, and Ripley of Jackson County all had 4.9 inches. Ripley measured 4.8 inches. Middlebourne had 4.6 inches. Huntington airport had 4.5 inches, while the airport near Parkersburg had 4.1 inches.

Since the ground was dry previous to this event, small stream flooding was mainly restricted to roads and the usual lowest lying areas. In some urban areas, the flooding was slightly more significant. For example, Fourpole Creek flooded Ritter Park and streets in Huntington. Rivers remained within their banks. However, this event set the stage for more serious flooding, to follow later in the month.

### **WVZ005>011-013-015>017-024-027>028**

#### **Wayne - Cabell - Mason - Jackson - Wood - Pleasants - Tyler - Lincoln - Kanawha - Roane - Wirt - Mingo - Clay - Braxton**

17 1100EST

21 1200EST

1

0

9.5M

Flood

As the weakening Hurricane Ivan moved inland across Alabama, light rain began in southern West Virginia on the morning of the 16th. The rain shield moved into northern counties overnight. Heavy rain began before dawn on the 17th around Huntington. The heavier rain moved up the Ohio River counties and engulfed the Ravenswood, Parkersburg, and Sistersville vicinity during the mid

# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

## WEST VIRGINIA, West

morning on the 17th. The heavy rain continue along the Ohio River counties into the mid afternoon, before lifting north and east. The more significant rain rates pivoted through central West Virginia during the late afternoon hours on the 17th before diminishing to drizzle after dark that evening. The low pressure remains of Ivan moved northeast through eastern Tennessee that afternoon, then through southwest Virginia during the evening. The storm moved off the coast during the 18th.

A 30 to 36 hour duration event dumped 3.5 to 6 inches of rain. The upper range was concentrated along the Ohio River counties from Huntington through Parkersburg. A secondary maximum in the rain ran south from Parkersburg into northern Kanawha County. Preliminary storm totals from cooperative observers had R C Byrd Lock and Dam with 5.9 inches, Elizabeth 5.0 inches, Wayne 4.9 inches, Sandyville 4.8 inches, downtown Huntington 4.7 inches, downtown Parkersburg 4.6 inches, Ripley 4.5 inches, Charleston 4.2 inches, Huntington and Parkersburg airports 4.1 inches, and Middlebourne with 3.8 inches.

Since the remains of Hurricane Frances were just 8 days prior to this rain, small stream flooding was more significant with the remnants of Ivan. Some of the same streams went higher than earlier in the month. Residents of Enslow Park in Huntington, for example, were evacuated due to flooding from Fourpole Creek. Many secondary roads were blocked and closed by small stream flooding during the afternoon and early evening on the 17th. Kanawha Twomile flooded Bonham Elementary School in Kanawha County with 1 to 2.5 feet of water. Maintenance men for the school had to scramble up a ladder to the school roof, to wait out the high water. One of the workers said, "almost like a flip of your finger, that's how fast it happened. It was unreal."

During that Friday evening the 17th, a 32 year old male was walking west of Harts in Lincoln County and fell into swollen Frances Creek. He drowned and his body was discovered the next day. Preliminary findings from a state police investigation indicated the man was under the influence of either alcohol or illegal drugs.

Most of the small stream flooding receded by late Friday evening the 17th. However, even heavier rain fell over the northern panhandle of West Virginia into western Pennsylvania. Rain amounts of 6 to 8 inches were more common there. As a result, the main stem of the Ohio River rose 1 to 2 feet per hour during the evening of the 17th in the Sistersville to Parkersburg vicinity. For example, at Parkersburg the Ohio River rose from 25.6 feet at 1600E to 33.0 feet at 2200E on the 17th. A slower but steady rise continue into Saturday the 18th. Moderate to major river flooding occurred on the 18th and 19th from the Sistersville vicinity on down through Saint Marys, Williamstown, Vienna, Parkersburg, Ravenswood, and Point Pleasant. The flood wall protected the city of Parkersburg. Backwater also caused flooding, sometimes a few miles from the Ohio River. One example, was along the lower reaches of the Little Kanawha River in Wood County. The crest on the Ohio River dampened below the mouth of the Kanawha River, with mostly minor river flooding through Huntington and Kenova.

Specific crests include Willow Island Lock and Dam 44.8 feet, Marietta 2SW 42.4 feet, Parkersburg 43.7 feet, Belleville Lock and Dam 45.8 feet, Racine Lock and Dam 50.2 feet, Point Pleasant 44.6 feet, R C Byrd Lock and Dam 51 feet, and Huntington 51.3 feet. At Parkersburg, the crest was the highest level in 40 years. Back in March 1964, the river reached 45.2 feet at Parkersburg.

A FEMA disaster was declared. See declaration 1558 for details. However, the worst damage in West Virginia with this disaster was in the northern panhandle counties, compared to further south. In terms of damage to housing, Tyler County had 5 destroyed and 19 with major damage. Pleasants County had 21 homes destroyed and 10 homes with major damage. Wood County reported several hundred homes affected. The Red Cross reported 19 homes destroyed in Wood County. Wirt County had 21 homes destroyed and 10 with major damage. Jackson County had 14 homes with major damage. Mason County had no homes destroyed, with around 50 dwellings affected. Cabell County reported 5 homes with major damage. Wayne County had 8 homes with major damage. Mingo County saw 15 homes with major damage. Kanawha County reported 8 homes destroyed and 12 homes with major damage. Tyler County reported around 30 businesses destroyed and 8 with major damage. Repairs to the Barboursville sewage system were around \$200,000.

M32OU

## WISCONSIN, Northeast

<b>Oconto County</b>						
5 NNE Mountain	11	1530CST	0	0		Hail (0.88)
<b>Marinette County</b>						
Beaver to	11	1615CST	0	0		Hail (2.00)
1 E Pound		1625CST				
<b>Marinette County</b>						
4 W Peshtigo to	11	1644CST	0	0		Hail (0.88)
Peshtigo		1654CST				
<b>Oconto County</b>						
4 W Oconto	11	1738CST	0	0		Hail (0.75)



# Storm Data and Unusual Weather Phenomena

September 2004

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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## WISCONSIN, Northeast

Thunderstorms developed in unstable air ahead of an approaching cold front. These storms produced large hail as they moved across northeast Wisconsin. One of the storms dropped 2 inch diameter hail as it passed through Beaver (Marinette co.).

**Brown County**  
**Green Bay**

14 1715CST 0 0 Lightning

Lightning caused a fire that did significant damage to a 70 foot tall church steeple in Green Bay. A church official declined to give a damage estimate when contacted by the National Weather Service.

**WIZ005-010-038**

**Vilas - Oneida - Outagamie**

15 1450CST 0 0 3.3K Strong Wind  
2015CST

Strong winds, associated with an intense low pressure system, downed trees and power lines across parts of north-central and east-central Wisconsin. One of the downed trees landed on a vehicle in Appleton (Outagamie co.).

## WISCONSIN, Northwest

**WIZ001>004-006>009 Douglas - Bayfield - Ashland - Iron - Burnett - Washburn - Sawyer - Price**

15 1900CST 0 0 8K Strong Wind  
2100CST

Strong gradient winds toppled trees and caused power outages across northwestern Wisconsin.

## WISCONSIN, Southeast

**WIZ052-059>060 Sheboygan - Washington - Ozaukee**

04 0000CST 0 0 Dense Fog  
0800CST

Dense fog developed during the overnight hours and lowered visibilities to below 1/4 mile. At times, visibilities were down to 50 feet in locations between West Bend and Germantown in Washington County. School bus rides and local aviation traffic were delayed, and travel on main roads and interstates slowed down considerably. Off shore, the dense fog persisted over the Lake Michigan waters until about 1300CST. Fair skies and a light southeast wind off Lake Michigan were factors in this dense fog event.

**Sheboygan County**  
**Plymouth**

15 1535CST 0 0 5K Thunderstorm Wind (G50)

A thunderstorm pulsed to minimal severe weather limits and toppled some large trees and power lines.

**Lafayette County**  
**Argyle**

23 1200CST 0 0 10K Thunderstorm Wind (G56)

An isolated severe storm, embedded in a cluster of general thunderstorms, generated locally powerful downburst thunderstorm winds in the Argyle area. About a dozen large trees and some power lines were toppled. The time is estimate, with the event taking place sometime between 1100 and 1300CST.

## WISCONSIN, Southwest

**Juneau County**  
**10 N Mauston**

14 1844CST 0 0 Hail (0.88)

Law enforcement officials reported nickel size hail between Mauston and Necedah.

**Taylor County**  
**Medford**

15 1335CST 0 0 Thunderstorm Wind (G52)

## WISCONSIN, West

**Dunn County**  
**2 E Wheeler**

05 1635CST 0 0 Funnel Cloud

A funnel cloud was reported by a trained spotter on Highway 170.

**Polk County**  
**1 SE Horse Creek**

05 1735CST 0 0 Thunderstorm Wind (G50)

Trees were downed on West Church Rd. The time was estimated.

**Pierce County**  
**6 SSW Ellsworth to**  
**5 S Ellsworth**

05 1740CST 1 25 0 0 Tornado (F0)  
1742CST

A tornado touched down in an open field, then moved into a wooded grove where it broke a few trees, then dissipated.

**Polk County**  
**2 NE Balsam Lake**

05 1755CST 0 0 Thunderstorm Wind (G50)

Trees were downed on 120th St. in Milltown Township. The time was estimated.

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## WISCONSIN, West

### **St. Croix County**

**1 NW Wilson to** 05 1828CST 0 0 **Funnel Cloud**  
**2 S Glenwood City** 1832CST

A funnel cloud was reported by the fire department near the intersection of Highway 128 and Highway 12 just west of Wilson. The same funnel was spotted by the fire department 2 miles south of Glenwood City.

### **Barron County**

**6 WNW Prairie Farm** 05 1905CST 0.3 25 0 0 **Tornado (F0)**  
1906CST

A tornado touched down briefly, breaking several trees and destroying a shed.

### **St. Croix County**

**Hudson** 23 1340CST 0 0 **Thunderstorm Wind (G52)**

A tree was downed.

## WYOMING, Central and West

### **WYZ017**

#### **Wind River Basin**

18 1300MST 0 9 1M **Wildfire**  
2000MST

A human caused fire was started near Goes In Lodge Road on the Wind River Indian Reservation south of Riverton during the afternoon. The fire threatened urban areas on the south side of Riverton by late afternoon. The fire was fueled by dry southwesterly wind that gusted between 30 and 35 mph at times. A total of nine people were treated for minor injuries and smoke inhalation. The fire claimed 300 acres, four campers, 33 vehicles on a used car lot, and a mobile home used for storage. Damage totaled around one million dollars before the fire was extinguished.

### **Fremont County**

**Milford** 30 1625MST 1 50 0 0 **Tornado (F0)**  
1635MST

At 4:25 MST, a tornado briefly touched down 6 miles north of Lander near the small community of Milford, before lifting off the ground around 4:35 MST. The tornado touched down over a rural area. There was no damage to any man-made structures.

## WYOMING, Extreme Southwest

NOT RECEIVED.

## WYOMING, North Central

NONE REPORTED.

## WYOMING, Northeast

### **Weston County**

**16 SW Upton** 14 1244MST 0.1 10 0 0 0 0 **Tornado (F0)**  
1315MST

A weak tornado reached the ground at times over open land. No damage was reported.

### **Weston County**

**8 NE Rochelle** 14 1300MST 0.5 10 0 0 0 0 **Tornado (F0)**  
1310MST

Several reports of a weak tornado on the ground between 1300 and 1310 LST. The tornado remained over open areas and caused no damage.

## WYOMING, Southeast

### **Niobrara County**

**Lance Creek** 03 1820MST 0 0 **Hail (0.88)**  
1823MST